U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-268 709

Nonpoint Source Control Guidance, Hydrologic Modifications

Environmental Protection Agency, Washington, D C

Feb 77

PB 268 709

NONPOINT SOURCE CONTROL GUIDANCE

HYDROLOGIC MODIFICATIONS

FEBRUARY 1977

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Water Planning & Standards
WASHINGTON, D.C. 20460

NATIONAL TECHNICAL
INFORMATION SERVICE

TECHNICAL REPORT DATA (Please read Instructions on the reverse before completing)	
1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE Nonpoint Source Control Guidance, Hydrologic Modifications		5. REPORT DATE February 1977 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Norman A. Whalen		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS U. S. Environmental Protection Agency Office of Water Planning and Standards Washington, D.C. 20460		10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS U. S. Environmental Protection Agency Office of Water Planning and Standards Washington, D.C. 20460		13. TYPE OF REPORT AND PERIOD COVERED Final 14. SPONSORING AGENCY CODE EPA-700/01
15. SUPPLEMENTARY NOTES Prepared as Guidance for State and Areawide Water Quality Management Agencies		

16. ABSTRACT

In accordance with EPA's policy, a clear responsibility has been placed on organizations developing water quality management plans to establish regulations for control of nonpoint sources. Where needed, Best Management Practices such as those presented in this technical guidance document, will be implemented through such regulations.

Man's land-disturbing hydrologic modifications activities is one of the main nonpoint source pollution categories and, management practices presented in this document apply in general to all types of hydrologic modifications.

Advance planning can limit, through management decisions, the generation of conditions which could add materially to the pollution potential. Planning can avoid or limit exposure to potential problems through identification and allowance for natural hazards such as areas of unstable soils, limitations imposed by climate and topography; or land capabilities in terms of soil productivity or vegetative recovery potential.

Control of nonpoint source pollution should be considered during the planning stages of a project in order to ensure that the most effective application of measures is achieved during the project implementation period. An adequately developed plan should involve preventing sediment losses; reducing peak surface runoff; and preventing the generation, accumulation, and runoff of oils, wastewaters, mineral salts, pesticides, particulates, solids, and organic materials from the site area. The actual hydrologic modification selected for a [illegible] will be one incorporating BMP.

17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Soil Erosion Environment Management Water Pollution Control Land Pollution Abatement Nonpoint Sources	Channel Modifications Impoundments Various Construction Activities Resource Recovery Operations Withdrawal & Recharge Activities	13B
18. DISTRIBUTION STATEMENT Release Unlimited	19. SECURITY CLASS (This Report) Unclassified	21. NO. OF PAGES 108
	20. SECURITY CLASS (This page) Unclassified	22. PRICE PC A06 MF A01

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE

NONPOINT SOURCE CONTROL GUIDANCE
HYDROLOGIC MODIFICATIONS

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February 1977

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: FEB 11 1977 Wash., D. C. 20460

SUBJECT: Transmittal of Report Entitled "Nonpoint Source Control Guidance, Hydrologic Modifications"

FROM: F. A. Nelson, Acting Director
Water Planning Division

TO: All Regional Water Division Directors
Attn: Regional 208 and Nonpoint Source Coordinators

TECHNICAL GUIDANCE MEMORANDUM: TECH- 29

Purpose

This memorandum transmits to you the recently prepared nonpoint source control document.

Guidance

This hydrologic modifications nonpoint source pollution control guidance document is only one of a series designed to provide State and areawide 208 Agencies, the Federal agencies, and other concerned groups and individuals with information which will assist them in carrying out their water-quality planning and implementation responsibilities. It is provided in accordance with policies and procedures for the "Preparation of Water Quality Management Plans" (40 CFR, Part 131) which states that "EPA will prepare guidance concerning the development of water quality management plans to assist State and areawide planning agencies in carrying out the provisions of these regulations." Additional documents to be issued will involve silvicultural (forestry), mining, agricultural and other activities. The basic guidance information included in this nonpoint source control document is principally technical in nature and presented in four main chapters. They include information on the identification and assessment of existing hydrologic modification nonpoint source problems; analysis and procedures needed for selection of controls; descriptions of individual and systems of Best Management Practices (BMP); important considerations for predicting potential pollution problems from future hydrologic modifications activities and final plan format.

Enclosure

EPA Form 1320-6 (Rev. 3-76)

ACKNOWLEDGEMENT

The cooperation of EPA and other Federal Government Agency professionals, and others representative of the general public in the review of drafts and providing information is appreciated.

PREFACE

Organizations designated to develop comprehensive land and water use plans impacting on water quality management have a responsibility to establish regulations for control of nonpoint pollution sources. The EPA policy requiring establishment of such regulations is contained in the "Draft Guidelines for State and Areawide Water Quality Management Program Development", February 1976. EPA is currently developing nonpoint source pollution regulatory guidance to provide additional assistance to State and areawide 208 planning agencies in their nonpoint source control programs. This guidance document presents Best Management Practices (BMP) related to hydrologic modifications that the comprehensive plan may incorporate and be implemented through such regulations.

The hydrologic modifications nonpoint source pollution control guidance document is provided to assist State and areawide 208 planning agencies in carrying out their water quality management and implementation policies. Emphasis has been focused on the need to prevent those circumstances and situations involving comprehensive land and water management plan development which will produce nonpoint source pollution as a result of hydrologic modifications, through application of Best Management Practices. Since it is recognized that nonpoint source pollution in some degree is caused by hydrologic modifications, as alternative Best Management Practices, the plan development decision may be to eliminate the need for a structural alteration, or to include some non-structural measure which will prevent the potential pollution from occurring. This document was developed to assure that if the planning process reached the point that the final decision identified a need for structural measures, Best Management Practices of the most suitable type to control nonpoint source pollution would be included.

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BEST MANAGEMENT PRACTICES TO MINIMIZE WATER POLLUTION DUE TO HYDROLOGIC MODIFICATIONS

Introduction

Many development activities such as agricultural and commercial operations can foster planning to modify natural drainage systems or construct new drainage systems to accommodate changes in water flows. Modifying techniques include (1) channel modifications; (2) construction of dams to impound stream flows; (3) other types of construction activities such as new or artificial drainage systems to accommodate development; and (4) resource recovery operations actually located in streambeds, in particular, mining. In addition, there are many land development activities which, if not properly controlled, may result in unintended, and often undesirable, hydrologic modifications. In many instances these activities result in topographic and ground cover changes which could affect surface runoff rates, volume and direction adversely. Such effects are often experienced in areas undergoing rapid urbanization, and farming areas.

Hydrologic modifications may be of local or regional scope, and are being (or have been) implemented in areas extending throughout the nation, affecting both intra-and interstate waterways.

Advance planning can limit, through timely management decisions, the incorporation of conditions which otherwise could add materially to the pollution potential. Planning can avoid or limit exposure to potential problems through identification and allowance for natural hazards, such as environmentally sensitive areas, limitations imposed by climate and topography, or land capabilities in terms of soil productivity or vegetative recovery potential. Evaluating the alternatives of (1), not allowing activities which would necessitate hydrologic modifications, and (2) requiring non-structural measures for adequate water quality management is an important part of advance planning. Adoption of either alternative in lieu of a structural measure is, in itself, the Best Management Practice for that specific situation. As the title of this document indicates, the guidance included relates to the third alternative of actually incorporating a structural hydrologic modification, including appropriate Best Management Practices.

This document has been developed specifically as an aid for the Section 208 Areawide Planning Agency (or other similarly engaged organization) management level. Its main purpose is to provide guidance for the direction of staff efforts to incorporate best management in hydrologic modifications for control of nonpoint source pollution. Nonpoint source pollution is produced by sources other than those designated as point sources. Technical design applications utilized by the staff will not be included, since they are adequately covered in applicable technical manuals and handbooks currently in common use.

Description of Hydrologic Modifications

Hydrologic modifications resulting in nonpoint source pollution are activities of man that either directly or indirectly affect, or have affected, the natural stream-flow and associated ground water regime detrimentally. Pollutants are consequently added to the surface and ground waters from

the diffuse runoff, or by seepage or percolation. The levels of many of these pollutants are influenced by climatic events such as rainfall and the seasonal temperature changes, in addition to the effects of soil types and topography, destruction of stream biota, particularly wetlands, which impact water quality, and operating practices. Reference to hydrologic modifications as sources of nonpoint pollution should not be misconstrued as eliminating them from consideration as point sources with respect to certain aspects, which require control under the Sections 402 and 404 permit programs. (Public Law 92-500, with amendments).

Channel Modifications

Channel modifications are implemented primarily for flood control, surface or in-channel erosion reduction or for surface and subsurface drainage purposes. Such structural changes as dikes, levees, piers, docks, bridges and road fills may require or result in channel modifications which would not otherwise have occurred. There are seven different types of modifications which are potential nonpoint sources of pollutants. They are:

1. Clearing of debris and snagging of blockages operations to restore the former hydraulic capacity of a streambed. This is basically a periodic maintenance operation. Generally, these operations have the least nonpoint source polluting consequences.

2. Channel excavations which enlarge and reshape an existing channel, or which provide a new channel in its place. Heavy nonpoint source pollution can result.

3. Channel realignment to eliminate meanders that have developed in the natural streambed. Heavy nonpoint source pollution can result.

4. Construction of floodways to relieve the streambed of excessive flows of storm water. These are normally dry. If the floodway has been stabilized properly, minimal nonpoint source damage can result when flows subsequently enter the floodway.

5. Construction of retarding basins for the temporary storage of excess flows of storm water. These could be either on-stream or off-stream, which has the least nonpoint polluting potential during construction.

6. Construction of debris retention basins to hold back debris during periods of high water, which might otherwise result in extensive downstream erosion and pollution. The degree of nonpoint source pollution during basin construction is influenced by the amount of site disturbance.

7. Construction of drainage ditches or deepening existing ditches. In-channel vegetation of drains such as grassed waterways will limit nonpoint source pollution.

Impoundments

Dams are constructed to impound surface waters for water supply, flood control, fish and wildlife, hydropower, navigation, irrigation, recreation, flow diversion, low flow augmentation and combinations of some or all of these reasons. Their proper operation for the purposes intended must be considered and incorporated into suitable best management practices, and the operators must be adequately trained. They are usually assigned to one of the three following categories:

1. Run-of-the-river impoundments, which characteristically have low heads and water detention times limited to a few days.

2. Storage reservoirs, which are usually located on tributaries, impound water for seasonal, annual or longer periods have high heads, and encompassing an extensive area outside the original channel.

3. Reservoir areas that are integral to constructed floodways, to store high flows where topography is suitable. These would be dry in normal conditions.

Various Construction Activities

All types of ground-disturbing construction activities result in modifications to existing drainage flows, and if not given adequate design consideration, such hydrologic changes may become sources of water pollution. Construction nonpoint sources of pollution are the subject of a separate guidance document, and will not be covered here in detail. When a construction project includes hydrologic modifications which have nonpoint pollution potential, those best management practices recommended in that construction guidance document need to be implemented to prevent those nonpoint problems.

Resource Recovery Operations

The resource recovery activity of primary importance is that of the sand and gravel operation. However, mineral recovery operations of any kind which will disturb the existing streambed must be considered, as well as should oil and gas wells (exploratory and production) located in bodies of water.

Withdrawal and Recharge Activities

Surface and ground water withdrawal and recharge activities may produce undesirable effects such as reducing waste assimilative capacity, damage to fisheries, saltwater encroachment, surface subsidence, induced recharge, and mixing of water in aquifers of differing water quality.

Other Types of Activities

Concurrently prepared best management practices guidelines are available for activities incorporating hydrologic modifications in agriculture, silviculture and other categories, in addition to construction. However, best management practices should be applied for all other activities involving

hydrologic modifications, even if they are not specifically identified by guidelines. As an example, dense population development, with attendant drastic ground cover changes, will generate many pollution problems if not properly provided for, even well beyond the project location.

Identification of Pollutants

Seven general types of nonpoint source pollutants that result from hydrologic modifications are:

1. Sediment- Sediments are one of the most prevalent nonpoint source pollutants, occurring as a result of most types of hydrologic modification activities to varying degrees. The degree of pollution from sediments will vary with streamflow, snowmelt and rainfall runoff, soil types, and bedload characteristics, and will be most intense during the period when construction activities have removed vegetative cover, until it can become re-established. Where the sediments settle, bottom organisms can be smothered, and spawning beds can be destroyed. The increased turbidity during the transport phase will interfere with light penetration, hindering photosynthesis, and degrading recreational uses, and lowering the quality of water supplies. Sediments are also carriers of nutrients and pesticides which may have become adsorbed to their surfaces.

2. Nutrients- Where hydrologic modifications located in agriculturally intensive areas cause increased runoff rates and streamflow velocities, the natural concentration level of nutrients may be increased. In urban areas, similar circumstances will increase nutrient levels as a result of fertilization of lawns and gardens, but the amount of increase will be lower. Where the hydrologic modifications entail the degradation or destruction of wetlands associated with surface streams, nutrient loads may also increase significantly. Soil erosion also contributes to the problem by carrying adsorbed nutrients well beyond the areas that would normally be affected.

3. Pesticides- A similar pollution problem may be experienced with respect to pesticides as was described for nutrients, unless integrated pest management has been instituted. This term refers to control of pests by best available control methods which protect the quantity and quality of the crop while not causing unacceptable environmental pollution.

4. Herbicides and Rodenticides- Herbicides used to control vegetation along streams and/or cropland will have serious nonpoint pollution consequences unless properly utilized. Rodenticides to control burrowing animals which will affect such structures as levees and wastewater lagoon berms must also be properly utilized or nonpoint pollution will result.

5. Thermal- This form of pollution may result from channel modifications or impoundment construction. Not only is the temperature change that might occur a problem by itself with respect to sensitive aquatic life, but it can lead to serious changes in the dissolved oxygen level in the water body. As an example of the type of problem that might

be experienced in channel modification, if the normal tree cover is removed, and the channel is widened to handle design flood flows, the resulting shallow normal flow will be exposed to increased solar radiation, with attendant temperature increases, and a reduced capacity for dissolved oxygen. Impoundments that become stratified during the summer and winter may become oxygen deficient, which can, in turn, cause low dissolved oxygen problems downstream of the discharge. Flow diversions may also have the effect of increasing the temperature of the remaining, shallow flow, and a lowered dissolved oxygen level.

8. Chemicals - Hydrologic modifications such as dredging, with the attendant necessity to suitably dispose of the spoil, may result in release of pollutant chemicals from the spoil through leaching or percolation. The fines re-suspended in the streambed are another potential source of pollution if adsorbed chemicals are released. Changes in pH and dissolved oxygen levels that may occur in impoundments may cause release into solution of certain types of chemicals previously insoluble. Modifications that lowered the ground water table sufficiently in coastal areas could result in saltwater intrusion into a freshwater aquifer or into an estuary, with attendant salinity degradation. Excessive upstream diversions or withdrawals of freshwater from tidal estuaries will result in salinity incursions further upstream than would otherwise occur. The problem of dissolved gas super-saturation may be experienced at impoundment outlets, and downstream if suitable preventive measures are not incorporated.

Chemical stabilization techniques applied for control of fugitive dust and/or nonpoint source pollution will require coordination. Techniques selected must be complementary, rather than conflicting, with the choice of action selected being that which produces the best total end result, with respect to control of both nonpoint source pollution and fugitive dust, to the extent that both problems exist at a specific site.

9. Microorganisms - Modifications could result in pathogenic microorganisms entering the water from runoff or percolation and seepage. Changes in the existing flow regime must consider the effect on potential sources of such organisms. Changes in the chemical constituents of impounded waters, or their level of concentration, may stimulate excessive algal growth.

Considerations For Best Management Practices Selection

Best Management Practices for hydrologic modifications is the most practical and effective measure, or combination of measures, which will prevent or reduce the generation and/or transport of pollutants, upon implementation, to a level compatible with water quality goals.

The BMP selected for a specific hydrologic modification will not necessarily be the same in different areas of the country. Soil types, topography, climate, existing condition, local zoning and land use regulations, etc., must be considered in assessing the problem. The final determination of which BMP alternatives to apply in any specific case must suit the site conditions, and include appropriate public participation. BMP must be considered at the earliest stage practicable, and throughout the problem identification and analysis planning, design and construction phases.

The principal emphasis should be placed on measures that will prevent, or minimize nonpoint source pollutants which would be generated by the specific hydrologic modification. For purposes of nonpoint pollution prevention planning, alternatives which minimize need for hydrologic modifications will best suit BMP goals. The planner should be aware that having sufficient land available (through ownership or regulation) to implement the best mix of out-of-channel structural or non-structural alternatives is a controlling factor in BMP selection. Non-structural alternatives may include agriculture practices such as regrading of fields, non-till planting, or proper crop selection, to ease surface drainage problems. Reliance on tile drains may require further hydrologic modifications to allow gravity flow, requiring careful planning for their installation to minimize this change. All preventive measures must be fully integrated into the total management system for every hydrologic modification. In brief, the changes introduced should produce conditions similar to those existing in nature which past experience has proved will effectively control the potential pollutants, and maintain or improve the water quality, while avoiding changes which would be detrimental.

As in other areas of nonpoint source pollution, erosion control measures are an essential feature of most hydrologic modifications. Controlling sediment-bearing runoff will reduce the amount of adsorbed nutrients, pesticides and other chemicals that reach the nation's waters. Designs for modification must recognize this problem and provide suitable construction provisions as a part of the project. (With respect to pesticides, integrated pest management must be given suitable consideration). Subsequent operation and maintenance activites must continue to apply best management practices to assure the continued success of the pollution prevention measures.

The potential for thermal pollution problems must be assessed for some types of hydrologic modifications, and suitable control and construction measures must be applied to limit cover removal or replanting after construction. The choice of type of modification may even be determined by the need to control pollution of this type.

Prevention and Reduction Measures

The measures which can be applied to hydrologic modifications to prevent or reduce pollutants from reaching surface or ground waters may be vegetative, structural or institutional or a combination, in addition to those mentioned for agriculture, silviculture, etc., in the documents developed for pollutants related to those activities. Institutional measures relating to land use should not be overlooked, but will be more easily applied in non-urbanized locations. The variety of structural and vegetative control measures will be discussed in detail in applicable sections of this handbook. Unacceptable hydrologic modification work, from a nonpoint pollution source aspect, can result in sheer sides to channels, little vegetation on channel banks or berms, and destruction of valuable wetlands. Many other unacceptable modifications could also be cited, but these are representative examples. The avoidance of such results is the purpose of this BMP guidance.

CHAPTER I

METHODOLOGY FOR ASSESSMENT OF EXISTING PROBLEMS CAUSED BY HYDROLOGIC MODIFICATIONS

INTRODUCTION

It must be recognized that there are many locations within a designated planning area with hydrologic modifications already in existence. These modifications undertaken at some point in the past will have occasionally re-established so as not to be noticeable. They must all be identified, and the potential for generation and/or transport of nonpoint source pollution from such modifications including their capacities and condition, must be properly assessed. This activity should include the identification of anticipated pollutants. Some private and public projects constructed in previous years may have been poorly engineered or constructed, or did not adequately address reduction of soil loss, and protection of water quality based on current values. Rehabilitation of such work may be necessary to achieve BMP goals.

The final documents produced by the Section 208 Areawide Planning Agencies will become an important information source for preparation of any required Environmental Impact Statements for the area. Procedures adopted with respect to analysis, and selection of nonpoint source pollution controls, to prevent pollution from hydrologic modifications, must be directed towards this end.

While this chapter relates specifically to existing problems, the identification and evaluation effort would be similar when applied to planned modifications necessary to bring the future area-wide plan to fruition, with one major exception. The pollution contribution from existing modifications can be evaluated on-site in most cases, while for future modifications it

must be estimated. Similar conditions at future modification sites would produce pollution problems similar to those experienced at existing sites, unless best management practices are instituted, so it is a valid approach for planned modifications.

Hydrologic modifications, by their nature, affect the flow regime of the area in which they are located. The level of nonpoint source pollution produced by existing modifications which have been identified as problem areas will consequently vary with the intensity and duration of precipitation phenomena, and the surface characteristics encountered. Since the primary control area is, therefore, dependent upon the surface and subsurface characteristics (i.e., ground cover, soil types, topography and geology), it is the logical place to focus Best Management Practices to control nonpoint source pollution.

SCOPE

The identification and evaluation of all existing hydrologic modifications is an extensive task. To assure the economic utilization of limited time and resources, it will be necessary to limit the effort to the minimum required for an adequate evaluation. Hydrologic modifications which historically have not been, and are not expected to be pollutant sources, need only the limited investigation necessary to validate this fact, for the record. However, when additional development is anticipated in the area that includes, for example, stream channel modifications which will have an adverse impact on existing hydrologic modifications, a more comprehensive evaluation is necessary. As another example, extensive planned upland development affecting the ground cover significantly would necessitate including an evaluation of downstream hydrologic structures. This will assure that necessary measures are taken upstream to prevent the downstream structures from becoming potential sources of nonpoint pollution.

ADVANCE PREPARATION FOR SURVEY EFFORT

For comparative, ranking, and adequacy purposes, prior to identifying and assessing existing modifications, a survey form should be developed. It will be worth the initial effort to be certain that all the needed information be obtained during the field survey trip. The format to be adopted may involve a matrix-type of questionnaire, or just a series of questions to be answered by the survey, or a combination of both, as determined to be most effective.

INFORMATION SOURCES

Many hydrologic modifications now in place will have been incorporated in the course of area development, with the knowledge and approval of the local, county, state or regional agencies having area jurisdiction. These organizations will be valuable information sources. At the local municipal and/or county level, the following appointed officials and/or boards should be consulted, if considered appropriate sources of information:

- Assessors
- Health
- Fire
- Police
- Public Works
- Building Inspector
- Constables
- Zoning Board of Appeals
- City Forester
- Personnel Board
- Historical Commission
- Board of Ethics
- City Solicitor
- Park Commissioners
- Recreation Commissioners
- Board of Licenses
- Housing Authority
- Planning Board
- Development, Industrial Commission
- Redevelopment Authority
- Building Code Commission
- Conservation Commission
- School Building Commission
- Traffic Study Commission
- Municipal Utilities Authority
- Department of Community Affairs
- Soil and Water Conservation Districts

Elected officials at the municipal and county level include the mayor, clerk, treasurer, collector, councilmen/selectmen, county executive, soil conservation district officers and school committee.

State agencies and departments from which information should be sought, as appropriate, include the water supply/water pollution control divisions, conservation, public health, public safety, public works/engineering, industrial/economic development, agriculture, environmental affairs, natural resources, program planning and coordination, planning boards, State and local Universities, and State senators and representatives.

At the regional level, regional commissions, river basin commissions, governors' conferences, and interstate commissions should be given the opportunity for input. The state, regional, and local clearinghouses established by Office of Management and Budget Circular A-95 should be consulted for possible help in identifying appropriate contacts in the other agencies, and to assure that none are overlooked.

Federal agencies that should be consulted, as appropriate, include the Departments of Interior, Agriculture, Commerce, and Transportation, the Federal Power Commission, Appalachian Regional Commission, Energy Research and Development Administration, the Tennessee Valley Authority, the Water Resources Council, the Council on Environmental Quality and the Corps of Engineers. In some agencies, more than one bureau or office will have an interest in a specific project involving hydrologic modifications, and none should be overlooked.

EVALUATION AIDS

In many locations, the evaluation effort should draw on many sources for pertinent data and other information. While these sources will differ in various parts of the country, they can include the following:

Geologic, hydrologic and topographic maps.

Land use, zoning and planning maps.

Studies and reports developed for the area, or similar areas and situations.

Interviews with long-time area residents.

On-site inspections.

Newspaper records.

Local industry, farm groups, contractors, etc.

Water treatment facilities records.

Established national level data bases (i.e. WATSTORE and STORET).

Insitu sampling and analysis.

Soil surveys.

ON-SITE SURVEY AND ASSESSMENT

With the use of area topographic and/or geologic maps, of the type prepared by the Geological Survey, U. S. Department of the Interior, Army Map Service, and others, and SCS aerial photographs and landsat photographs, on-site inspections of all existing hydrologic modifications should be conducted. Use of the previously discussed survey form will produce a uniform documentation of all data collected. Locations checked in the field survey should include all types of stream crossings and channel modifications, water impoundments, construction activities, and dense population centers, where drainage patterns or runoff velocities may have been modified. Published geological information on the sites should be supplemented by field evaluation of exposed material at road cuts, along water courses and in river beds.

Evaluating the existing hydrologic picture in the planning area with respect to both surface and ground waters is essential in the survey. Existing hydrologic modification activities which contributed to, or are potential contributors to, nonpoint source pollution, require identification. The relationship of nonpoint source pollutant constituents and their concentrations to the current, or base line water quality, and established water quality goals should be determined. This requires an awareness of the different types of nonpoint source pollution which may result if not provided for in the design and construction of any hydrologic modification.

Interviews with long-time residents will be extremely useful in determining apparent effects that the surficial development modifications have produced, when evaluated in conjunction with U. S. Weather Bureau data and old newspaper accounts. Studies and reports of modifications completed in the past, when correlated with the development directions now being taken and the results experienced, will be valuable in determining cause and effect relationships of present pollution problems. This evaluation should identify environmentally sensitive areas such as wet lands, steep slope areas, highly erodable soils and scenic watercourse reaches, as evidenced by the results of existing hydrologic modification projects, and such public surveys.

NONPOINT SOURCE POLLUTANTS IDENTIFICATION

SEDIMENT

The most visually evident result of nonpoint source pollution from existing hydrologic modifications is generally soil erosion, which causes increased sediment loads to be transported and deposited in the receiving watercourses. Since hydrologic modifications generally must be accomplished in locations directly involving flowing water, climatic effects like concentrated rainfall and rapid runoff merely intensify the degree and increase the areal

extent of erosion of disturbed soils. Sediments, which includes solid mineral and organic materials, are transported downstream. Chemical and/or biological pollutants often are present in the sediments.

The concentration of any specific pollutant already present in the receiving waters may be at or above the maximum level allowed by the water quality standards. If testing and analysis of soil and water samples representative of conditions at the site of the project indicate the presence of additional amounts of pollutants, all efforts should be directed towards preventing their runoff. Selection of the modification alternative(s), and procedures incorporated during actual construction, must emphasize the best management practices available both to minimize and then to maintain control of those pollutants generated. Only in this manner will the project comply with the non-degradation and water quality standards requirements established by the States.

In addition to the initial erosion damage, sediment resulting from the erosion at the project site, will exert a detrimental influence on the hydrologic regime of the water body into which it is released. While in suspension it blocks the sunlight penetration required for photosynthetic activity. When it reaches locations or conditions which lower the flow velocity sufficiently, sediment will become deposited on the bars and/or along the bottom of the water body. This deposition covers and destroys benthic organisms, interrupts the food chain, modifies the ecology, obstructs navigation channels and harbors, and will, over a period of time, reduce reservoir storage capacity and stream carrying capacity, thus contributing to flooding. Eventually, silting of streambeds and impoundments may necessitate additional costly excavation to re-establish channel and impoundment capacities. Wise land use practices and properly planned hydrologic modifications can manage or avoid this eventuality.

Sediment released by erosive action at a project site may also carry quantities of adsorbed chemicals and/or nutrients and pesticides into the water in toxic quantities, or cause release of nutrients in sufficient quantities to stimulate undesirable aquatic growths which are possible secondary pollutant effects of sediments. Types of adsorbed pollutants and their concentrations will vary considerably across the country, but the degree of variance within any designated planning area will primarily reflect the land and its uses within the drainage area.

Climatic conditions in some regions of the country may necessitate the application of stabilisation chemicals for control of fugitive dust, for air pollution control. Therefore, in addition to the pesticide, insecticide, herbicide and rodenticide type chemicals, and undesirable heavy metals which may be present in the soil, surface stabilisation chemicals need to be identified and their pollutant potential evaluated in locations where their application is known or suspected. Some of the factors to be evaluated in pollution surveys include the topographic, geologic and soil characteristics of the area; land usage; and recorded accounts of past evidence of pollution, such as effects on indicator organisms (for example, fish kills). Observations of the water bodies during and after high runoff periods at several locations along their length often disclose suspected sources of high sediment loads, which require corrective action through the implementation of Best Management Practices.

NUTRIENTS

Nutrients of primary concern are nitrogen and phosphorous, and they will be found in much higher concentrations in agriculture-intensive

areas than elsewhere, normally. This is not meant to imply that they won't be found in excessive amounts elsewhere; homeowners may apply fertilizers in extra heavy amounts to their lawns and gardens, inadvertently. Also, nitrates of geologic origin may be carried into water courses by spring flow and along with erosion-produced sediments. Their existence or potential should be determined, and evaluated.

BIOLOGIC POLLUTANTS

Biologic pollutants may exist in project locations prior to construction such as impoundments, channel relocations or high flow retention basins or supplemental channels, as an example. Their presence as bacteria, fungi and/or viruses may be the result of prior utilization of the area as, for example, a sanitary land fill. Contamination may be the result of leachates from adjacent areas polluting the groundwater which subsequently re-entered the surface water. Unless the history of the area is sufficiently well known to assure the absence of such pollutants, suitable testing is necessary to validate any conclusions concerning their presence.

THERMAL POLLUTION

Thermal pollution resulting from hydrologic modifications will have adverse effects on the aquatic biota in different ways. In the case of channel modifications, a broad shallow flow replacing a deep narrow channel, with the former tree cover removed, will raise the temperature level of the flowing water. Temperature sensitive organisms will either succumb or migrate. The change in temperature may become an effective migration barrier if it is sufficiently extensive, or the consequent reduced dissolved oxygen level may become the growth limiting factor. Temperatures produced

may also interfere with life cycle phases of migrating fish, which are triggered by water temperatures.

CHEMICAL

In addition to the problems of chemical pesticides entering the surfa and ground waters from nonpoint sources, attention must be directed towa other chemical pollutants. Coastal areas are susceptible to saltwater intrusion from excessive ground water withdrawal. Impoundments frequent stratify and unless multiple outlets for withdrawal from selected depths, or aeration procedures, are available, dissolved oxygen deficiency in the reservoir depths or in the discharge water downstream will present unacceptable conditions for the normal aquatic biota. Ferric and manganic precipitates present may be reduced under the anaerobic conditions to the ferrous and manganous states, adding detrimentally to the level of their concentrations already in solution. Nitrogen super-saturation may develop downstream of the spillway or outlets of some impoundments, producing nitrogen embolism in the fishery population. Improper regulation of the discharge, whether by actual operation or as a result of institutional requirements, may result in reduced flows causing increased salinity concentrations, as high salinity ground water percolates into the stream.

ASSESSMENT OF POLLUTION FROM EXISTING HYDROLOGIC MODIFICATIO

For sampling, testing and analysis to be acceptable, qualified personnel and laboratories, familiar with standard methods and procedures should be utilized. Assessment of sediment problems resulting from erosion at the location of existing hydrologic modifications may require obtaining new cross-sections and profiles in areas of obvious erosion and subsequent sediment deposition. Comparison with the as-built project plans will give an indication of the magnitude of this problem. Evaluation of the numbers

and variety of aquatic biota both above and downstream from the project may reflect the effect of the pollution on their environment. Analysis of soil and sediment samples will permit determination of the types of chemical and biological pollutants that may be present, and their concentrations. Analysis of water samples taken from above, in the vicinity of, and below the modification location will provide information on the pollutant contribution from adsorbed chemicals, bacteria and viruses which are released into the water by the sediment. Tests to determine the presence of and identify pesticides, herbicides, rodenticides and fertilizers should be conducted. The presence of algal blooms during certain times of the year in the waters in the vicinity of the project is indicative of the probable presence of excess nutrients, where the phenomenon has become evident since construction of the modification.

Modification of temperature and dissolved oxygen levels resulting from hydrologic modifications can be ascertained by testing. To ascertain the extent of any problem, it will be necessary to sample cross-sections above, in the vicinity of, and below the project in question. Timing of the sampling should be related to the life cycle phases of migrating aquatic organisms to determine if barriers of temperature and oxygen levels will interfere with their migration.

Evaluation of pollutants which become re-suspended in the water as a result of sediment inflow should include consideration of the synergistic effects of combinations of pollutants. These effects may be significant, while the effects of the pollutants, taken individually, might appear to be inconsequential.

In many areas, hydrologic modifications in the form of highway stream crossings, and channel modifications have been inadequately designed for flood protection. This has become a serious problem in areas where the

watershed was rural when the project was designed and built, but now is rapidly urbanizing. The changed ground cover and topography resulting from the development has modified drainage patterns and overland flow rates and percolation capabilities radically from the criteria on which the designs were originally based. Erosion, including complete washouts, increasing the sediment load in the surface waters, along with all the attendant pollution problems discussed above, are the symptoms of the problems which now exist. Corrective measures to be undertaken should incorporate the applicable Best Management Practices.

Polluting effects of dredging operations conducted to modify channels may be determined through a sampling and analysis program similar to that described previously. Once identification is completed, it is essential that the contributing cause or causes for release of the pollutants be determined. This will permit establishing alternative measures of accomplishing the same channel modification effect, while minimizing or eliminating release of the pollutants. Care must be taken to assure that the cure proposed does not produce pollutants of a different type, and possibly do more damage than the original project. Spoil disposal provisions need to be evaluated to be certain that adequate controls are in effect to prevent any pollutants determined to be present from reaching the surface or ground water.

With respect to resource recovery operations, primarily within the streambed itself (although not limited to this location, only), consideration must be given to preventing adverse downstream effects. These operations include:

1. Dredging
2. Drag line and clamshell excavation
3. Power shovel excavation
4. Bulldozer and scraper excavation

Concentrations of pollutants of any kind may have accumulated by adsorbing to particulate matter. Their downstream release during the recovery process would degrade the water quality unacceptably. To the extent feasible, watercourses should be re-routed away from the resource recovery site during the period of operations. Activities relating to dredging, specifically, must be conducted in compliance with the Corps of Engineers regulations, and Environmental Protection Agency guidelines, copies of which are included in the Appendix for convenience.

MONITORING

Where in-stream monitoring has been in progress, information obtained from this system should be used wherever applicable. Industries located along watercourses which utilize process water would be logical sources of information concerning the types and levels of pollutants that have been detected (to the extent of testing done). Water supply treatment facilities are also valuable information sources not to be overlooked. The locations of such industries and water supply facilities with respect to existing identified hydrologic modifications may throw light on pollution impact of such modifications. Space satellites also have identified the presence of pollutants in some areas of the country, and this possible source should be investigated.

Initiation of a new in-depth monitoring program should not be considered for the purpose of completing the assessment of existing conditions. Such an effort is long-term in nature, and would not supply ready data within the short time-frame available. With respect to modeling, unless there is a large supply of usable data readily available, and a suitable model, this too should be relegated for use on a long-term basis, due to the time constraints imposed.

CHAPTER II

PROCEDURES FOR ANALYSIS AND SELECTION OF CONTROLS FOR HYDROLOGIC MODIFICATIONS

INTRODUCTION

Hydrologic modifications, whether of a topography altering or ground-cover altering type, or having other specific modifying aspects of the surface and ground, have an effect on the movement of water. This effect may be deliberate or may be the unintentional net result of the total activity involved, or may fall somewhere between these two extremes. The concentration level of pollutants generated from nonpoint sources will be related to the amount of precipitation within the watershed, the soil conditions and ground cover in the area of precipitation, and the runoff rate as affected by man's activities. Section 208 area-wide plan development must include considering the conditions existing both out-of-channel and in-channel before any modifications are made, the effects during construction, and subsequent to construction completion.

DATA NEEDS FOR ANALYSIS, AND DEVELOPMENT OF BMP

Erosion derived sediments, resulting from and transported by rainfall or snowmelt runoff, will be affected directly by localized climatic events such as intense, short duration storms, and unseasonal temperature increases causing rapid snowmelt. Development of Best Management Practices must consider these factors in locations where pollutants are generated from this source. In addition to local climatic data, the rate, velocity and quality of runoff, susceptibility of the soil to erosion, chemical and physical properties of soils affected, including geologic data and typical drainage data, such as slope, surface cover, overland distances

to feeder branches, etc. are essential. Any other characteristics, which may be unique to the specific area, should also receive consideration in the analysis.

PRECIPITATION DATA

Several sources of precipitation data are available. The National Weather Service, Department of Commerce, reports daily rainfall in monthly issues of "Climatological Data". Hourly data is also available. Analyses of the rainfall data have also been published. Another useful publication is "Rainfall Frequency Atlas of the U.S., TP 40, U.S. Weather Bureau. Special storm reports and research papers of other Federal and State agencies, and universities, published irregularly, may be useful.

There are publications such as "National Engineering Handbook, Section 4, Hydrology", by the Soil Conservation Service, and "Design of Small Dams", by the Bureau of Reclamation, which provide essential information for estimating the amount of rainfall to be expected in the area, the duration of storms, and antecedant conditions in the drainage area, as well as other factors, in analysing the available data. The U. S. Army Corps of Engineers Hydrologic Engineering Center has developed a STORM model to account for differences in sediment generation under rainfall induced runoff and snowmelt runoff.

WIND DATA

Because fugitive dust control measures must be integrated into the total pollution control effort in areas where they are utilized, wind data are needed. Reference should be made to U. S. Department of Agriculture Handbook No. 346, "Wind Erosion Forces in the United States and Their

Use in Predicting Soil Loss". This test includes wind erosion capacity data, prevailing wind directions, and the prevailing directions of the preponderance of wind erosion forces.

SOILS AND GEOLOGY

An understanding of geologic characteristics is necessary, because construction of hydrologic modifications will disturb the surface and subsurface soils during the period of construction activity. Also, impoundments will change ground water levels, which result in soil changes over a period of time. For example, recognizing the environmental sensitivity of soils within the planning area is essential to project site selection. Information concerning the physical characteristics of the surface and subsurface materials can be found in soil survey reports published by the Soil Conservation Service, U. S. Department of Agriculture, geologic reports provided by public agencies at all levels of government, and data from local universities. This information was probably obtained for objectives other than pollution control, and suitable caution must be exercised in its application.

Geologic characteristics which must be considered in the development of Best Management Practices include the density, permeability, degree of consolidation, composition and thickness of the various materials, and depth to ground water or subsurface aquifers, and the quality and direction of movement of that water. These inter-related characteristics affect the generation and movement of pollutants from the project site.

In many situations, where the nonpoint source pollution problem evaluation is related to existing hydrologic modifications, subsurface investigations were made for development of the project design and

may be obtained from either the client or the engineering firm engaged for the project. Similar information for comparable facilities in the general area of the project site, may be available. Where no such records are available, it may be necessary to take samples and analyse them. These samples must be representative of conditions at the project site and extend to the maximum depths of the modification. If material is to be brought into a specific project site, construction requirements must assure that it will be free of pollutants that could subsequently be released to the environment, and have physical characteristics suitable for its intended use.

TOPOGRAPHY

Many hydrologic modifications, such as impoundments and stream channelizations, involve major topographic changes, which affect the existing flow regime. Existing conditions may be determined from field inspections and surveys, in conjunction with information shown on Geological Survey topographic maps, the U. S. Department of Agriculture soil maps, and the Army Map Service, Corps of Engineers, maps. Important information will include the length and slope of the terrain, as well as established drainage patterns, ground cover and roughness. Certain locations may require obtaining detailed topographic data, on a site-specific basis.

RUNOFF DETERMINATIONS

When the hydrologic modification is implemented in dry conditions, as a result, for example, of stream flow diversion into part of the channel width the area exposed at any time to rainfall and runoff must be kept to a minimum and revegetated as soon as possible. The amount of

precipitation falling on such exposed areas that will initiate runoff and erosion is related to the character of the exposed materials, topography, rainfall intensity, and elapsed time since the last rainfall. The Soil Conservation Service's "National Engineering Handbook, Section 4, Hydrology" provides a procedure for estimating runoff through the use of Watershed Curve Numbers. The curve numbers have been developed to indicate amount of direct runoff that a storm will produce as a consequence of the soil type and hydrologic conditions of the area.

PROCEDURES FOR SELECTING AND IMPLEMENTING BMP

Application of Best Management Practices should receive initial consideration during project planning phases. In the case of existing hydrologic modifications with nonpoint source pollution problems, the actual project needed in the Section 208 plan consists of the corrective measures required to solve the nonpoint pollution problem. An adequate area-wide plan must include the best of all the Best Management Practices alternatives, whether structural or nonstructural, available for correction of each nonpoint source of pollution. This approach recognizes that it is always more desirable, and usually less expensive, to prevent nonpoint source pollution, than having to correct it by subsequent effort.

Since no discharge of nonpoint pollutants is the BMP goal, non-structural measures, such as flood plain zoning, or out-of-channel structural measures such as floodways, should receive preferential selection over in-channel modifications. Planners should include streamside easements adjacent to channel modifications to protect the channels and adjacent wetlands, especially where public funds are involved in the modifications.

Contract documents must include specific control measures needed, scheduling and coordination of activities and use of permanent versus temporary techniques. Whenever the hydrologic modifications may include

structures with controls, provision for suitable operating instructions, and training of the operators in acceptable operation and maintenance programs, must be required.

When the problem evaluation results in a determination that non-structural measures will prove most effective and institutional changes are needed, it will be necessary to develop a suitable plan of action to accomplish the changes. The local community must be educated about those needs and their desirability. The technical staff should plan to provide the inputs for necessary legislative and regulatory changes. Any specific requirements which land owners, developers, and contractors must comply with must include enforcement means and measures, to be effective.

ADEQUATE PLANNING

The area-wide plan, to be adequate, must include a survey of existing hydrologic modifications which contribute to nonpoint source pollution of the surface and ground waters. In addition, hydrologic modifications planned as part of future development projects in the area will require incorporation of Best Management Practices to prevent pollution. This could be as simple a measure as eliminating environmentally sensitive areas from hydrologic modification siting considerations, to the more complex problems of establishing significantly large areas of land for use in carrying excess runoff flows at acceptable velocities as part of a specific channel alteration project, or a ground cover alteration project which would affect the runoff rates and velocities significantly, or a combination of these. Limitations on resources available, and their best utilization, has been discussed in Chapter I.

Since many hydrologic modifications involve existing water courses, potential pollution during the actual construction period can be minimized

by scheduling activities to coincide with low flow during limited rainfall periods, unless increased pollutant concentration levels within the stream cannot be prevented by suitable measures. In some projects a temporary settling basin downstream of construction activities, through which flow may be diverted during the construction period, may also be necessary to trap sediment. Keeping soil area exposure to a minimum during construction activities will also reduce pollution caused by erosion. Control measures must be properly maintained for the length of time they must be effective, and their subsequent removal in an acceptable manner needs to be specified.

Replacing large areas of permeable cover by the process of urbanization with impermeable building roofs, paved roads and walks, and paved parking lots is the standard practice. Where precipitation was previously slowed naturally by infiltration losses in tracing its path to the drainage system through surface runoff, or percolation into the ground water, these impermeable surfaces and storm drain interceptors decrease the time for runoff to enter the local streams. The collected rainfall thus quickly carried by gutters and storm sewers to the surface drainage network stresses a formerly adequate system beyond its capabilities with the increased runoff volumes and velocities imposed in a given time period, generating nonpoint source pollution. The total plan for urbanization must acknowledge the problem, and prevent the nonpoint source pollution that would otherwise occur, by application of Best Management Practices. Passing the problem on to the impacted downstream inhabitants is no longer an acceptable solution for the project site.

Diversion of water out of the watershed, which reduces the flow within the watershed, will cause different effects at different locations within both watersheds, and any adverse effects must be identified. Adverse

effects could be increased salinity as a result of leached salts from agriculture irrigation flows through the ground water, or upstream encroachment of salt water in tidal estuaries due to reduced flows , for example. In some locations reduced stream flow could result in percolation of polluted ground water into the streams due to the lowered stream gradient. Also, reduced water depth may result in water temperature increases, algal growth stimulation, and decreases in the dissolved oxygen level. Where remedial Best Management Practices are necessary to prevent nonpoint source pollution, they must be provided.

Impoundments may be used to store excess runoff for release during periods of low flow during the year. This measure may be necessary to compensate for diversion losses. Water stored must achieve an acceptable level of water quality, both within the impoundment and downstream. Best Management Practices with respect to design, construction and operation of the dam and impoundment and related effects on water quality and downstreams uses must be included or the cure for the low flow nonpoint pollution source could become the cause of other pollution problems, such as algal blooms, gas super-saturation, dissolved oxygen depletion, temperature changes, etc.

Stream channelization and wetland drainage projects, because of their far-ranging effects, will require detailed and close evaluation on a case-by-case basis, unless they are very minor in scope. (Refer to Appendix C, for the EPA policy statement concerning wetlands protection and EPA/Corps of Engineers Section 404 permit program). It will have to be demonstrated that such projects, utilizing Best Management Practices, can be accomplished with little or no damage to the total area ecology, and the alternative of protecting existing conditions without change must be considered. The acknowledgement of the extreme importance of remaining wetlands as

essential nurseries for nature's use has accentuated the need for their retention in most situations, and made justification of their drainage for other uses less likely. Such requirements will be reflected in development of the data supporting projects of these types, and the analyses that identified these measures as preferrable to available alternatives.

The setting for a hydrologic project (which may vary from urban to rural), and whether it is located on public or private land, will influence the selection of possible alternative hydrologic modifications, and associated best management practices. The means of their implementation as the areawide development proceeds will also be influenced by the circumstance of ownership. The differing approaches that must be considered to accomodate these ownership differences need to be finalized during the planning stage, and included in the areawide plan. Such approaches must include educational efforts to sensitize owners to the need for protection of watercourse and wetland values and may include regulatory approaches to achieve selection of BMP.

CONTROLLING EROSION AND SEDIMENT TRANSPORT

Effective and economic control of runoff erosion and sediment transport is possible by application of suitable procedures, individually or in combination. Examples are:

1. Limiting the areal extent and exposure time when bare ground is most susceptible to erosion by surface water runoff. Coupled with this in some locations is limiting construction to periods during the year when minimum precipitation is normal.

2. Diverting runoff water around the exposed surface area to greatly reduce the amount of runoff crossing the erosion-vulnerable ground.

3. Utilizing sediment basins to reduce runoff velocity and trap the suspended sediments.

4. Providing a design that will prevent outflow velocities great enough to cause erosion downstream.

5. Including debris retention devices to prevent clogging of streambeds at bridges and culverts, thus assuring that the flow will be retained within the banks, avoiding more erosion-susceptible areas outside the streambed.

6. Slope banks to facilitate revegetation and retard erosion, or hold rip-rapping.

7. Follow the natural channel contours, especially in steeply sloping topography.

8. Seeding banks and revegetating in natural trees and shrubs for erosion and thermal protection.

9. Shape spoil and berms to facilitate revegetation and prevent erosion.

10. Grassed waterways and sediment traps to protect water quality.

11. Minimum widening of channel to prevent thermal pollution.

12. Easements to protect channels and wetlands.

CONTROLLING POLLUTANTS OTHER THAN SEDIMENTS

Sediment controls enumerated above will also effectively control transport of adsorbed pollutants, such as pesticides, herbicides, nutrients, pathogenic microorganisms and other organic and inorganic pollutants. Dissolved pollutants, however, which represent a threat to ground water, will not be removed by these measures, nor will un-adsorbed microorganisms. A different approach must be used. Optimum application rates of pesticides, fertilizers, and herbicides, as well as timing considerations become important, along with suitable disposal of wastes associated with their application. The incorporation of integrated pest

management practices, as described in Chapter I, will minimise pollution. To control vegetation along channels, boom mowing is preferrable to herbicide spraying.

MANAGEMENT OF INCREASED STORMWATER RUNOFF

The existing drainage network within and downstream of a project site has been developed naturally over a period of time, to handle the storm flows experienced. Any project which increases peak flows will cause an increase in the channel carrying capacity through erosion unless Best Management Practices are applied. Stormwater management regulates the release of this runoff by various means. Flow may be retarded by the use of storage facilities, or the volume of surface flow may be reduced by improving the infiltration capacity of soils by, for example, contour benching the slopes. Modifying the new drainage patterns to lengthen flow distances will increase the time of travel of the runoff, reducing its velocity, and sediment-transporting capability. Another practice is to leave suitably vegetated strips of adequate width within the project site to intercept the overland runoff and trap much of the erosion-produced sediment and debris. Facilities for stormwater management should be designed with an operating life equal to that of the hydrologic modification project.

In some locations where water is impounded, it may be necessary to design the spillway to discharge the overflow horizontally across the downstream surface to prevent dissolved gas supersaturation. Operation and maintenance schedules of such structures should include Best Management Practices to minimise detrimental water quality effects within and downstream of the impoundment.

MAINTENANCE PRACTICES

In the on-going maintenance program for BMP measures such guidelines should be followed as minimal herbicide use along channels where vegetation must be controlled, regular inspection of water-courses, and selective removal of debris and blockages, and repair of damage to banks that may be resulting from erosion.

CHAPTER III

SELECTED PRACTICES

FOR

HYDROLOGIC MODIFICATIONS CONTROLS

INTRODUCTION

The survey and evaluation will have identified those existing hydrologic modifications producing nonpoint source pollution. Planning for the future development and growth of the area will identify locations where hydrologic modifications will be needed. Both corrective efforts for existing problems and future planned hydrologic modifications will include many possible types of projects. The following includes selected practices to accomplish hydrologic modifications while maintaining adequate control to prevent nonpoint source pollution or reduce it to acceptable levels.

GENERAL

For practices described which require construction in and adjacent to surface water drainage networks, it is important to devise work schedules which will minimise exposure of unprotected soil to the erosive effects of precipitation and runoff. The effects of such activities will be minimised if they can be conducted during no-flow periods, in the case of intermittent streams, and during times when precipitation intensity in the project area has historically been at a minimum. Detrimental effects can be further reduced by scheduling activities to expose only relatively small areas of disturbed surface at a time, and re-vegetating or otherwise stabilising them as quickly as practicable. The type of hydrologic modification determined to be most suitable, as well as its location, must include consideration of its potential impact on downstream raw water supply intakes and treatment works, and the treated water produced.

Existing projects in many locations will show evidence of erosion to some degree. Where erosion is serious, interim corrective measures may be required while the causes and alternative steps, incorporating Best Management Practices, that will provide a permanent solution, are being determined. The type of interim measure will be site specific, and could be strip sodding on replacement fill, sandbagging, or dumped rock riprap, provided it will suitably protect the project from complete failure and temporarily minimize the erosion problem. Re-vegetation with, or without, the use of mulches (sprayed on or hand-placed) and commercially available degradable protective matting are other suitable alternatives for protecting ground surfaces. Channel lining with an impervious sheeting to above the high water line might be considered in certain locations, but its resultant effect on existing bottom organisms must be considered.

In locations where erosion is occurring on bank cuts as a result of intermittent surface runoff, diversion berms and slope drains may be used to intercept the flow of water and redirect it for removal at a decreased velocity. This will prevent further erosion if coupled with appropriate re-seeding measures. Small check dams, or sediment basins may also be necessary to detain the water and trap the sediment load. They will add to the required maintenance effort. Some locations and situations may best be improved and controlled by use of gabions to prevent erosion and the attendant sediment pollution.

Pollution effects from erosion and sediment transport are greatest during periods of, and immediately following, intense storms, while most established water quality standards must be met during minimum flow conditions. This does not mean that it is unnecessary to prevent the pollution effects of storm generated erosion even though the resultant

diluting effect of the increased flow may keep the levels of pollutants within acceptable water quality limits.

Many types of hydrologic modifications require dredging during their implementation or during their operation. If dredged material is to be discharged in waters of the United States, it will be necessary to comply with requirements outlined in Appendix A and Appendix B, including testing of the material that is dredged and deposited in spoil areas. To avoid repetition, this requirement will not be repeated in discussing each of the applicable hydrologic modifications.

Best Management Practices developed for application in nonpoint source pollution control of dredge and fill operations need to comply with the following Section 404 guideline objectives:

1. Avoid significant disruption of chemical, physical and biological integrity of the aquatic ecosystem.
2. Avoid significant disruption of the food chain.
3. Avoid inhibiting movement of fauna.
4. Avoid destroying wetland areas of significance.
5. Recognise that essential floodplain areas may be destroyed or isolated.
6. Minimise adverse turbidity levels.
7. Minimise degradation of aesthetic, recreational and economic values.
8. Avoid degradation of water quality.

CHANNEL MODIFICATIONS

General. The importance of the surface waterways as aquatic habitats and nurseries necessitates preservation of suitable conditions for such purposes, or their re-establishment, as necessary. Channel modifications frequently have major adverse environmental consequences, regardless of the type selected.

Their selection as a suitable hydrologic alteration should be kept to a minimum, and even then to be acceptable, their design and implementation must minimize or mitigate damage to the aquatic habitat.

Clearing and Snagging. This operation is primarily for the purpose of re-establishing the original hydraulic capacity and gradient of a channel. The effort is directed toward removal of obstructions from the channel which impede flow directly, increase hydraulic friction, produce turbulent flow conditions, or upon which debris carried by the flowing water will accumulate. Mechanical equipment used in such operations should be of such types and used in such ways as to minimize disturbance of the channel bed. In most situations, rubber tired equipment, with winch and cable will be preferrable to tread-laying equipment. Tree cover which is not an obstruction should be left in place, and should not be removed indiscriminately just to make the activity easier. Use of hand labor within the channel should be stressed. Debris removed must be properly disposed of out of the entire flood plain, so it can not become a future obstruction in the event of flooding.

Channel Enlargements and New Channels. Channel enlargements may be proposed for any locale, from rural to urban, while new channels will be proposed most often for future rural land use modification, by the practices of land drainage and irrigation. Channel enlargements should receive consideration for locations where experience, or expectations of planned development, demonstrate a definite need for increased hydraulic capacity of a drainage network. For example, the type and permeability of ground cover and topographic changes which are the result of urban development or surface mining activities shorten the time for precipitation to reach the streams, producing a higher peak flow than can be contained within the stream banks during intense storms.

In designing channel enlargements, consideration must be given to the possibility of maintaining a minimum depth of flow, and shade cover equivalent to that already in existance, for the purpose of maintaining the existing temperature levels. This can be accomplished by enlarging the channel at an elevation higher than the low flow water level surface elevation, leaving the original channel elevation and width untouched below that level. Easements or land purchase should be utilized to achieve BMP's. In locations with limited room to enlarge the channel, it may be necessary to use vertical walls in place of sloping banks. However this measure should be kept to a minimum, and riprap construction using appropriately-sized rock would be more desirable than concrete, from a biological aspect, as well as aesthetically. This type of wall construction will also be sufficiently permeable to allow maintenance of the existing ground water level if the hydraulic gradient is maintained. An impermeable structure is less desirable in most situations, unless there is a need to limit such ground water movement, to prevent pollution of either the stream or the ground water, or prevent lowering of the ground water table.

Obviously, selection of the best method for enlarging a channel must be determined on a case-by-case basis, and no specific method will be suitable for all situations. This discussion has, therefore, been limited to pointing out specific situations which will require consideration. (Figure 1).

Dredging may also be considered in enlarging the capacity of an existing channel. An inherent problem with this procedure is the requirement that the starting and ending points of the project match the existing streambed elevation. Where adequate land is available, and the downstream end of the project provides a sufficient capacity to pass all water safely downstream, within the existing stream banks, construction of a series

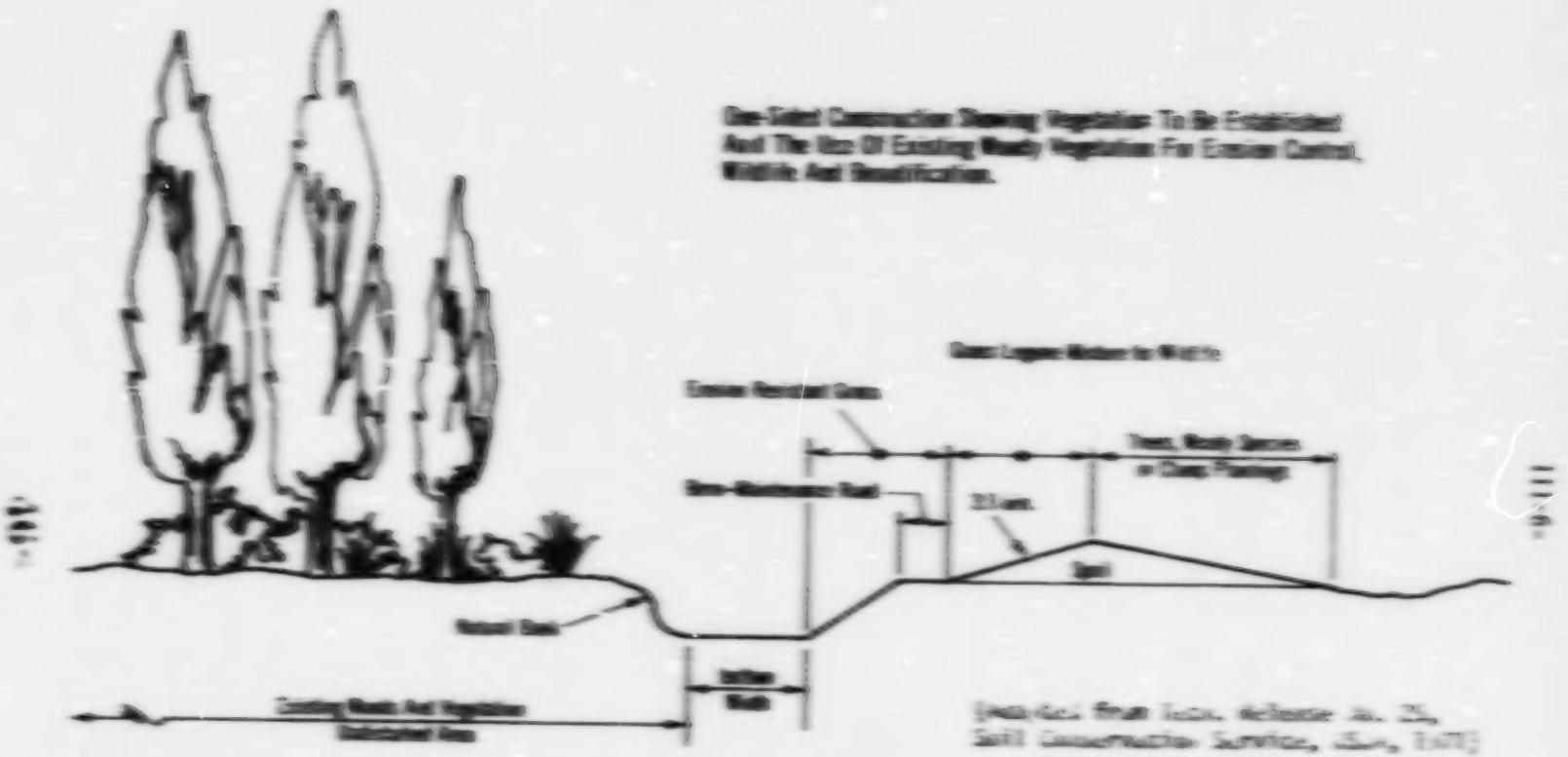


Figure 1 [illegible]

of pools and riffles, may be the most acceptable solution. The use of grade variations to protect soils of differing degrees of sensitivity to erosion, which may be located within the reach of the project, will increase channel stability while allowing more freedom in design of the modification. (Figure 2).

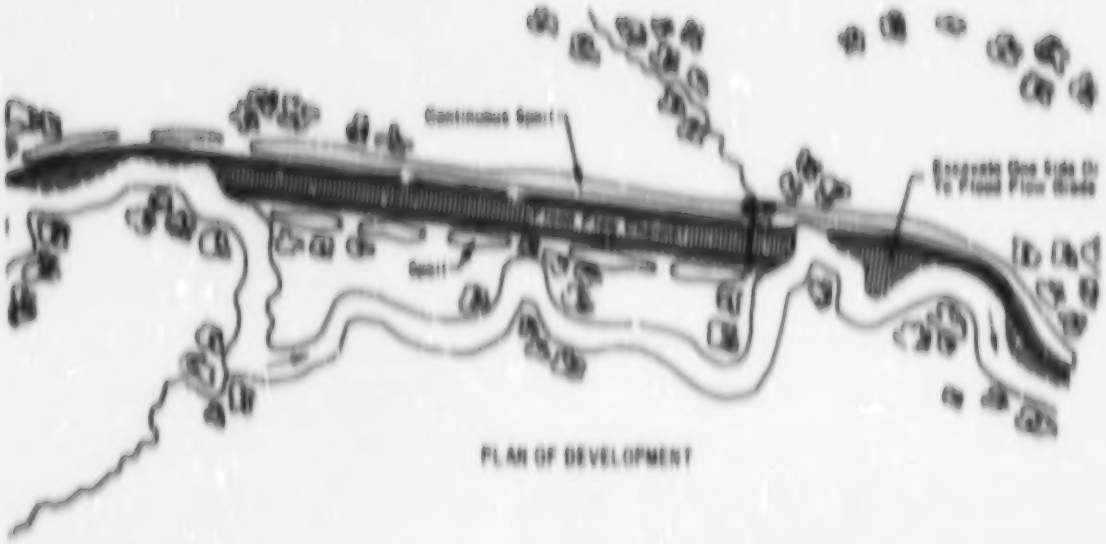
Channel Re-alignments to Eliminate Meanders. Evaluation of the suitability of constructing new channels must include a determination of the effects on the level and quality of both the surface and ground water. The soils that will be encountered, and the change in velocity and its effect if no protection is provided must be given adequate attention. This includes potential scouring effects above the beginning and subsequent sediment deposition below the end of the new shortened channel, both during high and low flows. The elimination of the oxbows and meanders within the project length will also affect the biological capabilities of the stream to act as a natural purification system, which requires consideration. If, for example, the biologic, hydrologic and geologic conditions at a project site permit the increased velocity that will be produced in a new channel that eliminates several meanders, that increased velocity must then be decreased to normal below the project site to avoid erosion problems in the existing channel. It should be noted that low flow barriers to slow velocity will be of little help in preventing high water scouring within the modified reach. A stilling pond may be employed to accomplish this, or a cascade or drop structure may be used which will permit a much flatter slope immediately downstream to reduce the velocity to an acceptable level. Any such device must itself be designed so that it doesn't develop into a source of nonpoint pollution. If its efficiency is impaired by trapped sediment, a maintenance program to periodically clean out and properly dispose of the sediment buildup is essential. Suitable means of energy dissipation must be incorporated into any drop structure to reduce the likelihood of erosion.

(Adapted from Tech. Release No. 25,
Soil Conservation Service, USDA, 1971)

Figure 2 Channel Profile – Built to Grade and Bottom Configuration

Floodways. One type of structural modification used to control flooding is the floodway. To be utilized, there must be adequate and suitable land available for this purpose. Since the additional land will require regrading to provide additional floodflow channel capacity, the bottom elevation should maintain the hydraulic gradient of the normal stage in the adjacent original channel. If the floodflow channel is much shorter than the original channel, resulting in increased velocities, energy dissipation structures must be included at its outlet. (Figure 3).

Retarding Basins for Temporary Storage. In locations where the existing channel has the capacity to handle the flow of most of the typical storms experienced, but not the major storms which occur infrequently, the use of retarding basins to temporarily store the excessive flows and allow for acceptable discharge rates may be the best solution. For this alternative to be used, there must be suitable land available at sites where the basins will be effective. This could be open park land, or paved parking lots, for example. Regulation of the downstream hydrograph by this means permits lowering the flood stage elevation. A suitable maintenance program must be implemented to clear out debris and sediment that may otherwise render the basins ineffective. This measure has been successfully implemented in many instances to accomodate the changed hydrology that accompanies urban, commercial and industrial development, as a requirement by law. To solve the space problem in these areas, suitably-sized underground structures located under paved parking lots have been utilized.



PLAN OF DEVELOPMENT

(Adapted from Tour, Release No. 29, Soil Conservation Service, USDA, 1971)

UNDISTURBED STREAM CHANNEL & SEPARATE FLOOD FLOW CHANNEL

Figure 3 Undisturbed Stream Channel and Separate Flood Flow Channel

Debris Retention Basins. While retarding basins may work to retain debris, in some areas the channel can handle flood flows without retarding basins if the problems caused by excessive debris are eliminated. When the terrain through which the watercourse flows will by its nature contribute high levels of debris, and/or includes channel constrictions that may become clogged by the debris, its collection in retention basins needs serious consideration. There must be an adequate maintenance program to properly remove and dispose of the debris when it accumulates. Outlet design must include suitable measures to prevent clogging, such as bar screens, log booms, or other devices most suitable for the expected conditions at a given site.

Drainage Ditches. Areawide planning will include evaluation of the possibility of changed or improved land use through construction of new drainage ditches, and deepening of existing drainage channels. Environmental aspects which must be given consideration include:

1. Environmental sensitivity of the area to such activities, including:
   a. Ground water level; quality.
   b. Saltwater intrusion.
   c. Soil stability.
   d. Flora and fauna habitat.
2. Pollutants present in excavated or dredged material.
3. Measures to protect ditch banks from runoff erosion.
4. Environmental balance sheet of gains and losses with project implementation.
5. Naturally low areas which may serve as stilling areas to settle suspended solids, nutrients, etc.
6. Alternative use possibilities for the area under consideration.

Maintaining vegetated strips (including adequate shade to protect against thermal pollution and low dissolved oxygen), on slope and along both banks of the drainage ditches and providing suitably sloped ditch banks where feasible will help to prevent erosion due to overland flows. Layout of the drainage patterns to keep flow velocities acceptably low will prevent in-channel erosion problems.

IMPOUNDMENTS

Impoundments are constructed either as low-head reservoirs, usually on mainstems, and primarily to maintain adequate depths to allow navigation, or as multipurpose reservoirs on tributaries. Best Management Practices must be incorporated in the actual construction to minimize the pollution problems caused by soil erosion. Prior to this, the determination of need, site selection, and project design must also recognize the necessity to prevent nonpoint source pollution within the impoundment as well as from the impoundment. Factors which must be given adequate consideration in evaluating this type of hydrologic modification include:

1. Quality of the major source of influent water with respect to sediment load, dissolved oxygen, color, turbidity, other chemical qualities such as pH, inorganic salts, metals, nutrients, pesticides and herbicides. The sediment load could cause high maintenance requirements, or if carried through the reservoir by a density current, could impair water quality below the discharge point. Such impoundments serve as sediment traps, helping to prevent downstream water quality degradation from this source, if it isn't carried through in a density current.

2. Effect of the impounded water on the ground water, which may be beneficial or detrimental, depending on circumstances.

3. Effect of construction of dams and dikes on the movement of ground water.

4. Organic and inorganic materials present in the soil which will be flooded by the pool.

5. Provision of supplemental aeration to mix the reservoir water, producing a uniform water temperature and adequate dissolved oxygen levels. Maintaining dissolved oxygen levels in the hypolimnion will prevent the formation and leaching of undesirable chemicals and compounds from the benthic deposits which may occur under anaerobic conditions.

6. Incorporating into the design of the dam and spillway structure the deflectors necessary to prevent the discharge water from plunging too deeply under the tailwater surface, where total dissolved gas supersaturation in the stream below the dam may be a serious problem.

7. Providing for selective depth of withdrawal means in the gate structure, and developing an operation procedure to assure that the water withdrawn during any time of the year will not adversely impact the downstream environment into which it is discharged.

8. Maximum and minimum allowable fluctuations in the surface elevation of the operating pool, and an acceptable fluctuation rate.

9. The result of flow diversion for consumptive uses or diversion out of the drainage basin, if this is a reason for the impoundment. Will lowering the downstream hydraulic gradient produce adverse effects on either the remaining volume of streamflow or the ground water? Will leaching due to inflow of additional ground water increase salinity or other undesirable characteristics or, in tidal estuaries, will the salt water incursion advance further upstream? Would a submerged dam in the tidal estuary be necessary to block the advance of salt water, and if utilized, what favorable and unfavorable ramifications might be produced?

CONSTRUCTION ACTIVITIES

Many practices which relate to construction activities involved in hydrologic modifications have been discussed in the General section of this chapter. Others, applicable to any construction project, are included in separate guidance material for Best Management Practices applicable to all construction activities.

In addition, with respect to urban development which results in hydrologic modifications, such as increased runoff rates for storm water, there are several measures that may be integrated into the project to reduce the impact of the changes. They are designed to reduce or delay runoff, and consist of the following:*

Area	Reducing runoff	Delaying runoff
Large flat roofs	Cistern storage Rooftop gardens Pool or fountain storage Sod roof cover	Ponding on roof by constricted downspouts Increasing roof roughness
Parking lots	Porous pavement Concrete vaults and cisterns under parking lots Vegetated ponding areas Gravel trenches	Grassy strips on parking lots Grassed swales draining parking lots Ponding and detention measures for impervious areas
Residential**	Cisterns for homes Gravel driveways Contoured landscape Ground water recharge Vegetated depressions	Reservoir or detention basin Growing high-roughness grass Grassy driveways, gutters and channels Increased runoff travel length
General	Gravel alleys Porous sidewalks Mulched planters	Gravel alleys

* Extracted from "Table 7-1, -- Measures for reducing and delaying urban storm runoff", T. R. -55, Soil Conservation Service.

** Also applicable to agricultural runoff.

A discussion of the advantages and disadvantages of each of the measures, not included here, is contained in "Table 7-8, -- Advantages and disadvantages of measures for reducing and delaying runoff", also in T. R. -55, SCS.

RESOURCE RECOVERY OPERATIONS

Resource recovery operations may be underway or may be anticipated to occur whenever economics and demand combine to produce a profit incentive, or due to speculation by entrepreneurs. Such activities are primarily related to the sand and gravel industry, but Best Management Practices to minimize nonpoint source pollution during recovery of sand and gravel would be generally applicable to recovery of any minerals. The pollution is generated by operations conducted in or adjacent to streambeds when measures to prevent pollution are inadequate. To the extent such measures have been described previously in this chapter, they will not be repeated here. This guidance supplements, but doesn't supersede, the requirements of any necessary permits issued under Section 404 for control of point source pollution from sand and gravel operation return flows.

Selection of appropriate gravel extraction equipment for the location, and its proper operation, are important. Evaluation of the potential for release of adsorbed pesticides, herbicides, nutrients, heavy metals or other toxic substances, including fines which may settle out downstream and smother the bottom organisms, is essential. In some locations, it may only be necessary to provide a sedimentation basin to clarify the drainage waters before their release back to the stream. However, other sites may necessitate restricting the flow to a portion of the channel, allowing extraction under near-dry to dry conditions in the remaining channel or diverting the stream altogether. In these situations, operations would have to be scheduled during periods when the available

channel capacity could handle the total flow, but the type of equipment could be typical earthmoving machines.

The degree to which the channel is permitted to be re-shaped by the operation must be integrated into the total effect that will be produced beyond the area of the operation. If the operation is developed to reclaim material deposited in a stilling basin, it may be necessary to provide duplicate basins, to permit operations to proceed in one while the flow is handled by the other. This will prevent loss of fines and adsorbed pollutants downstream, while permitting year-round operations at a rate equal to the rate of sediment build-up in the stilling basins.

WITHDRAWAL AND RECHARGE ACTIVITIES

Most pollution problems resulting from withdrawal and recharge activities are classified as point sources. However, when changes induced in ground water levels and flow directions as a result of withdrawal and recharge activities result in contamination of an aquifer or stream of good quality water by saline or poor quality water they should be treated as nonpoint sources of water pollution. Similarly withdrawals from streams that result in a lowering of the streamflow sufficiently to cause pollution from poor quality ground water or saltwater inflows would be considered nonpoint pollution sources. Prior to implementation of either type of activity, extensive investigations may be necessary to assure that there will be no undesirable short-term or long-range effects resulting from the expected maximum zone of influence.

CHAPTER IV

METHODOLOGY FOR ASSESSMENT OF POTENTIAL PROBLEMS RESULTING FROM HYDROLOGIC MODIFICATIONS ACTIVITIES AND FINAL PLAN CONTENTS AND FORMAT

INTRODUCTION

The area-wide planning agency or state-wide planning agency, in non-designated areas, during the development of a modification plan, must recognize hydrologic modifications which impact the existing hydrology. This hydrologic modifications nonpoint source pollution control guidance document is provided to assist State and Areawide 208 planning agencies to carry out their water quality management and implementation policies. Emphasis has been focused on the need to prevent those circumstances and situations involving comprehensive land and water management plan development which will produce non-point source pollution as a result of hydrologic modifications, by application of Best Management Practices. Such practices include evaluation of alternatives early in the planning phase which may eliminate the need for a hydrologic modification, or result in selection of non-structural measures to prevent the nonpoint source pollution, although this manual is directed toward minimizing non-point pollution from structural modifications.

Starting with initiation of the area-wide plan, it is extremely important to identify environmentally sensitive land areas, and their locations with respect to anticipated population growth directions, land use trends, zoning, the area road development plans, and the drainage network. Recent population growth pressures have produced problems in environmentally-sensitive land areas. Where such problems brought early recognition of a need for corrective measures, whether structural or non-structural, the lessons taught by the past are valuable guides for today.

While this document is primarily concerned with Best Management Practices required to meet water quality objectives other complimentary needs should be recognized. An example is the requirements set forth in the Endangered Species Act of 1973, P. L. 93-205 for the protection of endangered species of flora and fauna.

Federally-funded hydrologic modification projects will utilize the planning process described in the Water Resources Council's "Principles and Standards" (P&S). The specific federal agency should be requested to provide the planning agency guidance on the application of P&S for any such project located in the planning area. This planning process, integrating the concept of Best Management Practices may also be utilized successfully by the planning agency on projects for which no federal funds are provided.

IDENTIFICATION METHODS AND CRITERIA

As typical methods of identifying environmentally sensitive land areas, consider evaluation of subsurface exploration logs developed for construction or water supply purposes within the area. Identify all existing wetland areas, and all areas with excessively steep slopes (as determined by the types of soils, this may vary) through the use of Soil Conservation Service, Geological Survey, Army Map Service, and possibly private mapping and surveying services, including photomapping. Recognize that radically altering the ground cover may transfer otherwise stable ground into the environmentally sensitive category.

As noted in the referenced information source identified at the end of this Handbook, there is no one optimum way of treating all environmentally-sensitive lands. This has resulted in land-performance type

regulatory programs, and environmental performance standards. It becomes the responsibility of the developer to choose acceptable methods that will be in compliance in such locations.

Criteria available which must receive attention are the established water quality standards. The use(s) for which specific stream reaches have been designated may preclude consideration of certain types of hydrologic modifications, completely.

Determination of the effects of a proposed hydrologic modification may require development of "as-is" and "future" hydrographs, for comparative purposes. This will require rainfall data for the area in question, to reflect duration, distribution and intensity. This type of statistics, and even hydrographs, may be available from studies conducted by local universities in some areas. Their development and use is adequately covered in technical texts on the subject, and will not be included here.

PRIMARY CONSIDERATIONS

Land use developments, whether related to population, industry, agriculture, commercial development, or other areas, need to be identified and located, spatially. To be realistic, they should be determined assuming current or pending controls, such as zoning and land use regulation that will remain in effect. At the same time, those land areas whose destruction or disturbance will immediately affect the life of a community by either (1) creating hazards such as flooding and landslides, (2) destroying important public resources, such as water supplies and the water quality of lakes and rivers, for which standards have been established, or (3) wasting renewable resources and important productive lands (including wetlands) must be identified.

While the approach selected to determine development trends will vary considerably, a starting point will be with the personnel and agencies identified in Chapter I. Many metropolitan areas have already prepared comprehensive land and water development plans, and initiated the legislative action necessary to insure their fruition, or found it essential to modify the plans to accomodate the political realities of the locality. In other areas, watershed development plans are available and contain much information to be incorporated in the area-wide plan, modified as necessary to include appropriate Best Management Practices.

In agriculture-intensive areas, the Soil Conservation Service or conservation districts, utilizing information on soil types and topography, have developed land use classifications with respect to their suitability for crop growth and prevention of soil erosion. Many areas have been classified using this system. Although not developed specifically for the purpose of identifying environmentally-sensitive areas, the classification data can be adapted to aid in locating such areas. Comparison of these sensitive areas with the initial locations of expected development based on trends and land use controls plan may result in plan modification to provide for the protection and preservation of the land.

SECONDARY CONSIDERATIONS

The area-wide planning agency's BMP program must be closely coordinated with plans developed or to be developed for contiguous or nearby areas. Activities planned for, or conducted within the jurisdiction of, these area-wide planning agencies must incorporate mutually acceptable Best Management Practices. The assessement of development directions which will require hydrologic modifications should meet with the approval of the contiguous

agency, to aid in evaluating potential problems from a common base. This is the situation whether the effort is directed towards structural, nonstructural, or a combination of these measures.

The increased sediment load generated by erosion of disturbed soils during the actual construction of hydrologic modifications, is a significant pollutant source which requires control by application of Best Management Practices. For guidance in applicable methodology concerning analysis of this potential problem, those steps outlined in the separate guidance document prepared for construction and agriculture Best Management Practices should be used. It should be noted that location of the construction effort within the streambed in many instances must be taken into consideration.

ASSESSMENT OUTPUTS

Conclusions reached as a result of the assessment must be incorporated into comprehensive area-wide land and water management plans. These plans should be developed in response to the desires of the general public. Whenever it is feasible to do so, the alternative hydrologic modifications anticipated, and the associated Best Management Practices to prevent water pollution, identified in the assessment, should be presented in public forums. The results of such exposure should be discussed in the area-wide plan. A program to be followed for presenting other portions of the plan to the public at appropriate future dates, during implementation stages, should be included.

As development proceeds, re-evaluation and modification of the area-wide plan will be required. The manner in which this will be accomplished, and the expected frequency of review should be described fully.

No plan is any good without an acceptable implementation schedule, and a budget including the necessary supporting funds. This schedule should at least include completion of all the major existing projects requiring corrective action, and those new projects which the assessment of potential problems disclosed would generate nonpoint source pollution without application of Best Management Practices. Contracts should include detailed requirements, and be phased to facilitate regular monitoring of work performance.

PRESENTATION FORMAT

Although different methods of presenting the data are used, most will include both area maps and narrative descriptions. A way of developing area maps is to use a series of overlay transparencies, with the number needed determined by the amount of information that can be displayed on each without causing confusion. An alternative method to convey the desired information, would be to display data with suitable color coding on a series of map prints.

Such maps which show the drainage network, environmentally-sensitive land areas, and the locations of the different types of expected area developments, will enable the agency staff to anticipate where hydrologic modifications may be required and what types to expect. For example, where channel modifications appear likely, an analysis of alternatives and determination of the Best Management Practices which must be incorporated to prevent nonpoint source pollution is required. The recommended type of channel modification for any specific location should be included.

The presentation may be organized as a portion of the total planning output, including all the applicable categories of nonpoint source pollution, or as of a series of appendices, each developed to outline a category of nonpoint source pollutants.

A suitable summary of the planning area recommendations, for use in addressing the general public, should be included. It should be couched in lay terminology, readily understandable to non-technical people. Maps and pictures should be used to the extent possible to present the anticipated changes which will require the application of the Best Management Practices described. This summary should include all aspects of the area development, including hydrologic modifications anticipated, in a well-integrated presentation.

UTILIZATION BY OTHER THAN PLANNING AGENCIES

It is incumbent upon the area-wide and state-wide planning agencies to assure that this and other similar guidance handbooks are called to the attention of, and made available to, developers or sponsors with projects either under way, or proposed, that are located within or in the vicinity of the area encompassed by the planning agency.

INFORMATION SOURCES

Nonpoint source pollution control practices discussed above in summary form are described in more detail in the following publications.

1. "The Control of Pollution From Hydrographic Modifications", EPA-430/9-73-017, United States Environmental Protection Agency, Washington, D.C. 20460, 1973

2. "Performance Controls for Sensitive Lands: A Practical Guide for Local Administrators", EPA-600/5-75-005, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C. 20460, March 1975.

3. "Investigation of Fugitive Dust Sources, Emissions, and Control, Volume I", EPA-450/3-74-036-a, U. S. Environmental Protection Agency, Office of Air and Waste Management, Research Triangle Park, North Carolina 27711, June 1974.

4. "Methods for Identifying and Evaluating the Nature and Extent of Nonpoint Sources Of Pollutants", EPA-430/9-73-014, U.S. Environmental Protection Agency, Washington, D.C. 20460, October 1973.

5. "Compilation of Federal, State and Local Laws Controlling Nonpoint Pollutants", EPA-440/9-75-011, U.S. Environmental Protection Agency, Washington, D.C. 20460, September, 1975.

6. "Impact of Hydrologic Modifications on Water Quality", EPA-600/7-75-007, U.S. Environmental Protection Agency, Washington, D.C. 20460, April, 1975.

7. U.S. Department of Agriculture, Soil Conservation Service, "National Engineering Handbook, Section 4, Hydrology", August, 1972.

8. "Dredged Material Research Program Ecological Evaluation of Proposed Discharge of Dredged or Fill Material into Navigable Waters", Miscellaneous Paper D-75-17, Office, Chief of Engineers, U.S. Army, Washington, D.C. 20314, May 1976.

9. "Methodologies for the Determination of Stream Resource Flow Requirements: an Assessment" U.S. Fish and Wildlife Service, Office of Biological Services, Western Water Allocation, 1976.

10. "Public Participation Handbook for Water Quality Management", Water Quality Management Guidance 6-76-02, Environmental Protection Agency, Washington, D.C. 20460, June 1976.

11. "Report on Channel Modifications", Volumes I and II, The Council on Environmental Quality, March 1973 (Volume I available on request to CEQ, in limited numbers.)

12. "Impacts of Construction Activities in Wetlands of the United States", EPA-600/3-76-045, U.S. Environmental Protection Agency, Corvallis, Oregon, 97330 April 1976.

APPENDIX

INDEX

Appendix A — Federal Register, Friday, July 25, 1975, Volume 40 Number 144, Part IV, Department of Defense, Corps of Engineers, "Permits for Activities in Navigable Waters or Ocean Waters".

Appendix B — Federal Register, Friday, September 5, 1975, Volume 40, Number 173, Part II, Environmental Protection Agency, "Navigable Waters, Discharge of Dredged or Fill Material".

Appendix C — Federal Register, Wednesday, May 22, 1974, Volume 39, Number 84, Part I, Environmental Protection Agency, "Protection of Nation's Wetlands, Policy Statement".

APPENDIX A

Many of the types of hydrologic modifications considered require dredging during their implementation or during their operation. For navigable waterway segments, it will be necessary to comply with requirements outlined in the information included in this Appendix, which covers testing of the material that it is proposed to dredge and deposit in spoil areas. The interim final regulations, as published, are subject to revision and publication in final form in the Federal Register. When this occurs, the final version will replace the one included in this Appendix. Prior to using the incorporated regulations, the appropriate District Engineer, U.S. Army Corps of Engineers should be contacted to ensure it is still current, or to obtain the latest version, if one is available.

federal register

FRIDAY, JULY 25, 1975
WASHINGTON, D.C.
Volume 40 ■ Number 144

PART IV

DEPARTMENT OF DEFENSE

Corps of Engineers

■

PERMITS FOR ACTIVITIES IN NAVIGABLE WATERS OR OCEAN WATERS

Title 33—Navigation and Navigable Waters

CHAPTER II—CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY

PART [illegible]—ADMINISTRATIVE PROCEDURE

Permits for Activities in Navigable Waters or Ocean Waters

On May 8, 1975, the Department of the Army, acting through the Corps of Engineers, published five alternative proposed regulations in response to the order of the United States District Court for the District of Columbia in *Natural Resources Defense Council, Inc., et al. v. Callaway, et al.*, [illegible] (D.D.C. March 27, 1975). Each of the four alternative proposed regulations pertained to the regulation by the Corps of Engineers of those activities involving the discharge of dredged or fill material in navigable waters pursuant to section 404 of the Federal Water Pollution Control Act Amendments of 1972 (hereinafter referred to as the FWPCA). Each of these alternatives offered an administrative definition of the term "navigable waters" for public review and comment, as well as a definition of the terms "fill material" and "dredged material" and certain procedures to implement the regulatory permit program under section 404 of the FWPCA.

Over 4,000 comments were received in response to this regulation. Those responding to the regulation included a large number of Governors, members of Congress, Federal, state and local agencies, environmental organizations, municipal, industrial, and trade organizations, port authorities, agricultural organizations and individual members of the public. A large number of these comments addressed the issue of whether there should or should not be a Federal permit program to regulate the discharge of dredged or fill material in navigable waters (defined in the FWPCA as "waters of the United States") rather than the particular provisions of the four alternative proposed regulations under review. Many comments appeared to be responsive to the pre-[illegible] news coverage of the proposed regulation.

Those comments which did address substantive aspects of the regulation generally tended to restate the dual purposes of the FWPCA: first the development of a workable program and, second, the needs of water quality. The regulation that clarified the activities which are included in the program and has incorporated administrative mechanisms to facilitate the implementation of the regulation to the maximum extent practicable consistent with other Federal and State laws and in the public interest. In further refining the program the Corps will again weigh the benefits of the public and of State and Federal agencies in identifying activities and bodies of water that can be excluded from the section 404 program without adverse impact on the objectives, chemical, or biological integrity of the nation's waters.

We look forward to again working with the public and the State and Federal agencies on these further changes.

The Corps of Engineers wishes to take this opportunity to express its appreciation to every individual, organization and governmental agency and representative that submitted comments during this rule making process.

The Department of the Army, acting through the Corps of Engineers, is publishing herewith an interim final regulation which prescribes the policies, practices, and procedures to be followed in the processing of Department of the Army permits for activities in navigable waters including the discharge of dredged or fill material in navigable waters. Interim final regulations are being published in order to begin immediately the implementation of a permit program under Section 404 of the FWPCA in those waters which will be included in the Corps regulatory jurisdiction as a result of the decision in *NRDC v. Callaway*. However, while this regulation becomes effective July 25, 1975, there will be an additional comment period of 60 days in order that the public can comment further on any of the provisions thereafter. These comments will be reviewed and the regulation modified if necessary.

The development of a permit program to regulate the discharge of dredged material and fill material in all waters of the United States has been the subject of intensive discussions between the Corps of Engineers and the Environmental Protection Agency since the decision in *NRDC v. Callaway*. We have worked together in an effort to develop a program that is reasonable responsive to the concerns of protecting vital national water resources from destruction through irresponsible and irreversible practices, and serve to the often competing needs and wishes of people who utilize these resources. We have attempted to create a program that recognizes the need to [illegible] all concerns of the public environmental, social, and economic to the decision making process that recognizes that present limitations on manpower preclude its immediate implementation throughout the country, and that we believe to be responsive to the present perceived needs of the Federal Water Pollution Control Act to the extent that the law now allows.

We recognize that this program, in the short run, may affect water quality to the full extent of the Congress' desire. We will extend Federal regulation over dredging or discharge of dredged or fill material to many areas that have never before been subject to Federal controls in the form of water quality protection. We therefore strongly urge the public to review and comment further on this interim final regulation in order that it can be modified, where necessary and legally permissible, to fully address all concerns. Therefore, we will, at this time, [illegible] our problems and understanding of this regulation, representatives from the Corps of Engineers intend to travel throughout the country during the next 60 days and conduct public hearings on this regulation. We urge your participation in these hearings when they are scheduled in your area.

As we move into this new program, we plan [illegible] and understanding for it to the extent that enforcement of its provisions becomes necessary, the Corps of Engineers intends to request the Department of Justice and the Environmental Protection Agency to take appropriate action. However, we intend to pursue a reasonable enforcement program over those activities that have never before been subject to Federal regulation, relying initially on an intensive public information campaign to make the public aware of the requirements of Section 404 of the FWPCA. It is our desire and intention to work closely with the Department of Justice and the Environmental Protection Agency to achieve this purpose.

On May 6, 1975, the Environmental Protection Agency, in conjunction with the Department of the Army, published proposed guidelines for public comment which are required by section 404(b) of the FWPCA in the review of a permit application for the discharge of dredged or fill material. It is anticipated that final guidelines will be published about August 15, 1975, during the interim, the present procedures will be utilized by Corps District Engineers in the review of permit applications for the discharge of dredged or fill material in navigable waters.

There follows a brief discussion of the pertinent sections of this regulation which address the discharge of dredged or fill material in navigable waters.

Paragraph 323.2(a). This paragraph defines the term "navigable waters" and in so doing identifies those waters of the United States which are subject to Corps jurisdiction under section 404 of the FWPCA.

With respect to the coastal regions of the country, Corps jurisdiction would extend to all coastal waters subject to the ebb and flow of the tide shoreward to their mean high water mark (mean higher high water mark on the Pacific Coast) and also to all adjacent wetlands. Wetlands are those areas which are inundated by water at frequent intervals and that are characterized by the presence of salt water vegetation capable of growth and reproduction and also wet lands including marshes, shallows, swamps and similar areas that are periodically inundated by freshwater and normally characterized by the prevalence of vegetation that requires saturated soil conditions for growth and reproduction. In moving to shore we intend to publish a list of head, breaker, and surf zones where they can be used as one of the indicators in determining the extent of Corps jurisdiction in these areas.

With respect to the inland areas of the country, Corps jurisdiction under section 404 of the FWPCA would extend to all those lakes and streams that are navigable waters of the United States, to all tributaries (primary, secondary, [illegible], etc.) of navigable waters of the United States, and to all interstate waters (in addition, Corps jurisdiction would extend to those waters located en-

[illegible] within one state that are utilized by interstate travelers for water related recreational purposes, or to remove fish for sale in interstate commerce, or for industrial purposes or the growing of agricultural commodities sold or transported in interstate commerce. Corps jurisdiction over these water bodies would extend landward to their ordinary high water mark and up to their headwaters as well as to all contiguous or adjacent wetlands to these waters which are periodically inundated by freshwater, brackish water, or salt water and are characterized by the prevalence of aquatic vegetation, as described in the preceding paragraph. Wet areas capable of growing and reproducing Mammalia species which are navigated by recreational or other craft are also included in this definition. Drainage and irrigation ditches have been excluded.

We realize that some ecologically valuable water bodies or environmentally damaging practices may have been omitted. We believe that those waters are also protected, as have given the District Engineer discretionary authority to also regulate them on a case by case basis.

Paragraph (d)(1)(ii) Several additional definitions amplify the definition of navigable waters and are expressed in this paragraph. "Ordinary high water mark," used as a measurement point to determine the extent of Federal jurisdiction in inland freshwater rivers, streams, and lakes that do not have wetlands contiguous or adjacent to them, is established as that point on shore which is inundated 33% of the time (derived by a flow duration curve based on available water stage data).

"Headwaters" has been defined as the point on a stream beyond which the flow of the water body is normally less than five cubic feet per second. However, other factors such as the volume of flow and extent and constant source discharge characteristics in the area will also be considered in determining these limits. Finally, lakes have been defined to include all natural bodies of water greater than five acres in surface area and also all bodies of standing water created by impounding any navigable water. This would not include stock watering ponds and settling basins other than those that may result from the impoundment of a navigable water.

During the 60 day comment period the public is urged to carefully review all of the various definitions, particularly those with respect to ordinary high water mark, headwaters, and lakes, and furnish comments and recommended revisions or assist in the development of a final definition of the term that is consistent with the goals and objectives of the FWPCA to protect water quality.

Paragraph (d)(1)(iii) The term "dredged material" has been defined to include any material that is excavated or dredged from any of the waters of the United States identified in the preceding paragraphs. It would not include material which is dredged from some other source beyond a water of the United States and also would not include materials produced in normal farming, silviculture, and ranching activities such as plowing, cultivating, seeding, and harvesting.

Paragraph (d)(1)(iv) The term "discharge of dredged material" has been added to the date of definitions to an effort to clarify the types of activities that fall under this term. Under this definition, therefore, any material which is excavated or dredged from a navigable water and then redistributed through a point source into a navigable water would fall under this term. The types of activities encompassed by this term would include the transporting into navigable waters of dredged material if it is placed alongside of a newly dredged canal which has been excavated in a wetland area. It would also include maintenance of these canals if excavated material is placed in navigable waters. Also included is the runoff or overflow from a contained land or water disposal area.

The term "discharge of dredged material" does not include the discharge of pollutants into navigable waters that occur during the subsequent land based processing of dredged material extracted for commercial use even though the operation of extracting the material itself may require a permit from the Corps of Engineers under section 10 of the Rivers and Harbor Act of 1899. Most types of materials from land based commercial mining operations are regulated under section 402 of the FWPCA.

Paragraph (d)(1)(v) The term "fill material" has been defined to mean any material that has been placed in waters of the United States where the effect is to replace any portion of the water body with dry land or change the bottom elevation of a water body for any purpose. Again, material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding, and harvesting for the production of food, fiber, and forest products, would not fall within this term. Farm conservation practices such as terracing, check dams, and landleveling would also not be regulated unless they occur in navigable waters. In addition, maintenance or emergency reconstruction of existing structures such as dikes, dams, or levees, will not be regulated.

Paragraph (d)(1)(vi) A new term "discharge of fill material" has been added to identify the types of activities to be regulated under section 404 of the FWPCA, and only if they are performed in a navigable water as that term has been defined in the regulation and discussed in the preceding paragraphs. These activities include site development fills for recreational, industrial, commercial, residential, and other uses. Causeways or road fills, dams and dikes, artificial islands, property protection and reclamation devices such as riprap, groins, seawalls, breakwaters, and jetties, and artificial beach nourishment projects. Placement of pilings, however, is not considered a discharge of fill material. Backfill required for the placement of structures such as sewage treatment facilities, intake and outfall pipes associated with power plants and subaqueous utility lines, and artificial reefs.

Paragraph (e)(1)(i) In view of manpower and budgetary constraints it is necessary that this program be phased in over a two year period. Provision for such a phase in approach exists in this paragraph. Thus, under Phase I, this regulation would become immediately operative in all coastal waters and contiguous or adjacent wetlands as well as inland rivers, lakes and streams that are navigable waters of the United States in which the Corps of Engineers is already regulating, and their contiguous or adjacent wetlands. In Phase II, which would begin on July 1, 1978, we would continue to regulate all of those discharges of dredged material occurring in those waters identified in Phase I, and also begin to regulate discharges of dredged or fill material in primary tributaries (the main stems of tributaries directly connecting to navigable waters of the United States), their contiguous or adjacent wetlands, and all lakes. Finally, in Phase III all discharges of dredged or fill material in navigable waters would be regulated after July 1, 1979.

We believe that the initial thrust of this phase-in program will enable the protection of those wetland and water resources areas that are in immediate danger of being further destroyed through unregulated development. As we move to implement these phases, we will endeavor to utilize general categorical permits to the maximum possible extent relying on individual permit actions to regulate only those environmentally significant activities. We will also attempt to identify additional categories of activities which can be excluded at a later date.

Discharges of dredged or fill material that occur before a particular water body falls under a particular phase are permitted by the regulation in paragraph (e)(1)(i), provided certain prescribed conditions are met before the discharge occurs. Included in these conditions is the requirement to obtain a State water quality certification (or to have the state waive the right to so certify) and the requirement to certify under section 307 (c)(3) of the Coastal Zone Management Act of 1972 that the discharge will be in compliance with an approved coastal zone management program. This approach does not automatically exempt all discharges of dredged or fill material occurring in a particular phase from the permitting requirements of the regulation, for it still gives the District Engineer the option of exercising jurisdiction over any activity involving the discharge of dredged or fill material in those cases where the activity will have a significant impact on the environment.

Paragraph (e)(1)(ii) This paragraph grandfathers all discharges of dredged or fill material in waters other than navigable waters of the United States which were completed before the date of this regulation and also permits any discharge of dredged or fill material of less than one cubic yards which was commenced before the date of this regulation and is completed within six months. This last quoted exemption

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to the requirements of this regulation must pertain to a single and complete project and must include descriptions of [illegible] discharges of dredged or fill material each [illegible] parcel. In a large number of projects which comprise and are associated with a complete plan of development, the term "project" as used in this paragraph is defined as used in this paragraph to [illegible] if there has been prior discharges of dredged or fill material at a specified disposal site by the entering into a written contract to do such before the date of the regulation. The grand authority of these activities does not avoid the legal requirement to comply with the State water quality certification requirements of section 401 of the FWPCA or to furnish a coastal zone management certification, however.

Paragraph (c)(1)(ii)(a): This paragraph permits (without the need for the processing of a individual permit) small navigation through the procedures in the regulation. Minor bulkheads and fills that are constructed in waters other than navigable waters of the United States provided they are less than 500 feet in length, constructed for property protection and involve the discharge of less than an average of one cubic yard per running foot. However, while these types of discharges are permitted through the regulation, conditions have also been imposed that must be met before the discharge can occur (including the need to obtain a water quality certification and furnish a coastal zone management certification). In addition, the District Engineer can still exercise jurisdiction over these activities in those cases where he determines that the discharge will have a significant impact on the environment.

We believe that this administrative mechanism of authorizing this type of activity through the regulation is essential in order to make this program manageable from a manpower and resource standpoint, and still protect the aquatic environment. In addition, it serves as a mechanism to alleviate the administrative burdens which are encountered in the normal processing of individual permits. To this end we intend to rely heavily on the general public to bring to the attention of the District Engineer those minor bulkheads and fill activities which, while falling within the provisions of this paragraph, should be regulated on a case by case basis.

Paragraph (c)(1)(ii)(b): Activities of Federal agencies that involve the discharge of dredged material or of fill material into navigable waters are not exempt from the provisions of this regulation. Activities of the Corps of Engineers involving such discharges are reviewed and regulated pursuant to the policies and procedures expressed in Title 33 of the Code of Federal Regulations, Part 209.120.

Paragraph (c)(1)(ii): We believe there is considerable merit in having the States assume direct level of in the decision making process to the maximum extent possible under the law. Indeed, many States already have ongoing permit programs which address many, and in some cases all of the concerns which are addressed in the Corps decision making process. There may still be need to involve the States in this decision making process. We have considered three types of mechanisms in an effort to make the program manageable and public acceptable and in response to the many [illegible] comments which supported the same concept.

First where each discharge of dredged or fill material into a navigable water is, in effect, the discharge of a pollutant into the water a State water quality certification is required under section 401 of the FWPCA before that discharge can be lawfully undertaken. Provision has therefore been made in the opening paragraph of this section to indicate this legal requirement. Thus, any State may refuse the denial of a section 404 permit if it chooses to deny a water quality certification. Another situation also exist in those states with approved coastal zone management plans. An individual in a state with such plans must also certify that his activity will comply with the approved plan. On the other hand, where the state does not have such a certification program or delays the processing of the certification, we will not hesitate to process the section 404 permit in absence of a timely response from the State. Once a section 404 permit will be processed to a conclusion.

Second, we are mindful that many states have existing permit programs to regulate the same types of activities that will be regulated through section 404 of the FWPCA by the Corps of Engineers. To the extent possible, it is our desire to support the state in its decision. Thus where a state denies a permit the Corps will not issue a section 404 permit. On the other hand, if a state issues a permit the Corps could not deny its permit unless there are overriding national factors of the public interest which dictate such action. We believe that this type of situation can be kept to a minimum provided the State's permit program has built into it the policies, procedures, guidelines, requirements and objectives established in the Corps permit program and the national legislation which guided and supports it. This would include for example the concerns and requirements of the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the Coastal Zone Management Act, and the FWPCA. In view of this objective a section 404 permit will generally be issued following a favorable State determination unless overriding national factors of the public interest are revealed during the final processing of the section 404 permit application and provided the concerns, policies, goals and requirements expressed in the other laws, statutes, executive orders, and the guidelines have been addressed. In those States without approved programs to regulate the same types of activities mentioned in section 404, we believe that the objectives expressed in this subparagraph should give them guidance in the formulation of their respective programs should they choose to do so.

Finally, provision has been made in subparagraph (iv) of this section to allow the District Engineer to enter into an agreement with those States having existing permit programs which would establish joint processing of the Department of the Army and the state permit application to an independent consideration by each entity. This would include joint public notice, joint public hearings and the joint development, review and analysis of information which leads to the final decision on a permit application. We strongly encourage States to work with our District Engineers in this effort for we feel that this is a valuable mechanism to make this program manageable and public acceptable as well as a means to avoid unnecessary duplication of effort.

Paragraph (c)(1)(iii)(a): We have also adopted a procedure found in this paragraph to process general permits for certain clearly defined categories. A general permit once issued would preclude the need for any further permit for similar work and would expedite considerably the time to be allowed in the future performance of such work. We hope this mechanism will go far in meeting our entire regulatory program administrative manageable and we will attempt to issue general permit for many categories in Phase II and III prior to the effective date of those phases. We intend to urge our District Engineers to utilize this mechanism as often as possible and to request that those Federal agencies, organizations and members of the public who review and comment on public notices for general permits do so in a spirit of cooperation, constructive criticism and suggestion.

During the next 90 days, comments addressing this Interim Final regulation should be submitted in writing to the Chief of Engineers, [illegible], Washington, D.C. 20314, ATTN: DAEN-CWO-W.

It is hereby certified that the economic and inflationary impacts of this regulation have been carefully evaluated in accordance with OMB Circular A-107.

Dated: July 22, 1975.

Robert H. Strunds,
Colonel, Corps of Engineers, Assistant Chief of Construction-Operations, Directorate of Civil Works.

§ 209.120 Permits for activities in Navigable Waters or Their Tributaries.

(a) Purpose. This regulation prescribes the policy, practice and procedure to be followed by all Corps of Engineers field activities in connection with applications for permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into navigable waters and the transportation of dredged material for the purpose of dumping it into ocean waters.

(b) Laws requiring authorization of structures or work. (1) Section 9 of the

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conditions for growth and reproduction; and

(ii) Those other waters which the District Engineer determines necessitate regulation for the protection of water quality as expressed in the guidelines (40 CFR 230). For example, in the case of intermittent rivers, streams, tributaries and perched wetlands that are not contiguous or adjacent to navigable waters identified in paragraphs (a) (1)-(3), a decision on jurisdiction shall be made by the District Engineer.

(b) The following additional terms are defined as follows:

(1) "Ordinary high water mark" with respect to inland fresh water means the line on the shore established by the fluctuations of all daily high waters. It is established as that point on the shore that is inundated "x" of the time and is determined by a flow duration curve for the particular water body that is based on available water stage data. It may also be estimated by physical or easily recognized characteristics such as shelving, change in the character of the soil, destruction of terrestrial vegetation, the inability to grow, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.

(2) "Mean high water mark" with respect to ocean and coastal waters means the line on the shore established by the average of all high tides (all higher high tides on the Pacific Coast). It is established by purely based on available tidal data (preferably averaged over a period of 18.6 years because of the variations in tide). In the absence of such data, less precise methods to determine the mean high water mark may be used, such as physical markings or comparison of the area in question with an area having similar physical characteristics for which tidal data are already available.

(3) "Lakes" means natural bodies of water greater than 8½ acres in surface area and all bodies of standing water created by the impounding of navigable waters identified in paragraphs (a) (1)-(3) above. Stock watering ponds and settling basins that are not created by such impoundments are not included.

(4) "Headwaters" means the point on the stream above which the flow is normally less than 5 cubic feet per second. Provided however, the volume of flow, point and nonpoint source discharge characteristics of the watershed, and other factors that may impact on the water quality of waters of the United States will be considered in determining this upstream limit; and

(5) "Primary tributaries" means the main stems of tributaries directly connecting to navigable waters of the United States and to main headwaters and does not include any additional tributaries proceeding up of the main stems of these tributaries.

(6) "Ocean waters." The term "ocean waters," as defined in the Marine Protection, Research, and Sanctuaries Act of 1972, (33 U.S.C. 1402 et seq.) means those waters of the open sea lying seaward of the base line from which the territorial sea is measured, as provided for in the Convention on the Territorial Sea and the Contiguous Zone (15 UST 1606; TIAS 5639).

(7) "Dredged material". The term "dredged material" means material that is excavated or dredged from navigable waters. The term does not include material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding, and harvesting for production of food, fiber, and forest products.

(8) "Discharge of dredged material". The term "discharge of dredged material" means any addition of dredged material, including any addition of one cubic yard when used in a single or incidental operation, into navigable waters. The term includes, without limitation, the addition of dredged material to a specified disposal site located in navigable waters and the runoff or overflow from a contained land or water disposal area. The charges of pollutants into navigable waters resulting from the subsequent processing of dredged material that is extracted for any commercial use (other than fill) are not included within this term and are subject to section 402 of the Federal Water Pollution Control Act even though the extraction of such material may require a permit from the Corps of Engineers under section 10 of the River and Harbor Act of 1899.

(9) "Fill material". The term "fill material" means any pollutant used to create fill in the traditional sense of replacing an aquatic area with dry land or of changing the bottom elevation of a water body for any purpose. "Fill material" does not include the following:

(i) Material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding and harvesting for the production of food, fiber, and forest products;

(ii) Material placed for the purpose of maintenance (including emergency reconstruction of recently damaged parts of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures.

(iii) Additions to these categories of activities that are not "fill" will be considered periodically and these regulations amended accordingly.

(10) "Discharge of fill material." The term "discharge of fill material" means the addition of fill material into navigable waters for the purpose of creating wetlands, elevation of land, conversion of navigable waters or for the impoundment of water. The term generally includes, without limitation, the following activities: placement of fill that is necessary to the construction of any structure in a navigable water; the building of any structure or impoundment requiring rock, sand, dirt, or other pollutants for its construction; site development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as riprap, groins, seawalls, breakwalls, and bulkheads and fills; beach nourishment; levees; sanitary landfills; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants and subaqueous utility lines; and artificial reefs.

(11) "Person". The term "person" means any individual, corporation, partnership, association, State, municipality, commission, or political subdivision of a State, any interstate body, or any agency or instrumentality of the Federal Government, other than the Corps of Engineers (see 33 CFR 209.145 for procedures for Corps projects).

(12) "Coastal zone." The term "coastal zone" means the coastal waters and adjacent shorelands designated by a State as being included in its approved coastal zone management program under the Coastal Zone Management Act of 1972.

(c) Activities Requiring Authorizations. (1) Structures or work in navigable waters of the United States (Regulation of the Army authorizations are required under the River and Harbor Act of 1899 (See paragraph (b) of this section) for all structures or work in navigable waters of the United States except for bridges and causeways (see Appendix A), the placement of aids to navigation by the U.S. Coast Guard, structures constructed in artificial canals within privately owned residential developments where the canal has been connected to a navigable water of the United States (see paragraph (g)(1)(i) below), and activities that were commenced or completed before May 27, 1975 (see 33 CFR 209.120) other than those activities involving the discharge of dredged or fill material in navigable waters after October 18, 1972.

(2) Structures or work are in the navigable waters of the United States if they are within limits defined in 33 CFR 329.300. Structures or work outside these limits are subject to the provisions of law cited in paragraph (b) of this section if those structures or work affect the course, location, or condition of the water body in such a manner as to significantly impact on the navigable capacity of the water body. A tunnel or other structure under a navigable water of the United States is considered to have a significant impact on the navigable capacity of the water body.

(3) Structures or work owned under the Federal Power Act of 1920 do not require Department of the Army authorizations under the River and Harbor Act of 1899 (see paragraphs (b) and (c) of this section). However, those and any part of such structures or work that involves the discharge of dredged or fill material into navigable waters of the transportation of dredged material for the purpose of dumping it into ocean waters will require Department of the Army authorization under Section 404 of the Federal Water Pollution Control Act and Section 103 of the Marine Protection, Research, and Sanctuaries Act, as appropriate.

(4) *Discharges of dredged material or of fill material into navigable waters.* (i)

[illegible] except as provided in subparagraphs (f)(1) and (f)(2) below, Department of the Army permits will be required for the discharge of dredged material or of fill material into navigable waters in accordance with the following phased schedule:

(i) *Phase I:* After the effective date of this regulation, discharges of dredged material or of fill material into coastal waters and coastal wetlands contiguous or adjacent thereto or into inland navigable waters of the United States and freshwater wetlands contiguous or adjacent thereto are subject to the procedures of this regulation.

(ii) *Phase II:* After July 1, 1975, discharges of dredged material or of fill material into primary tributaries, freshwater wetlands contiguous or adjacent to primary tributaries, and lakes are subject to the procedures of this regulation.

(iii) *Phase III:* After July 1, 1977, discharges of dredged material or of fill material into any navigable water are subject to the procedures of this regulation.

(iv) All other discharges of dredged or fill material that occur before the dates specified in subparagraphs (i), (ii), and (iii) above, are hereby permitted for purposes of Section 404 of the Federal Water Pollution Control Act without further processing under this regulation: *provided, however, That* the procedures of this regulation, including those pertaining to individual and general permits (see paragraph (i)(2)(iii)(a), below), shall apply to any discharge(s) of dredged or fill material if the District Engineer determines that the water quality concerns as expressed in the guidelines (see 40 CFR Part 230) indicate the need for such action; and further provided, That the following conditions are met:

(a) That a water quality certification under section 401 of the Federal Water Pollution Control Act (see paragraph (i)(1)(i) of this section) is obtained before the discharge is commenced or the State has waived its right to so certify;

(b) That a certification of compliance with a State's approved coastal zone management program pursuant to section 307(c)(3) of the Coastal Zone Management Act (see paragraph (i)(1)(i), above) is furnished, if applicable, before the discharge is commenced;

(c) That the discharge will not be located in the proximity of a public water supply intake;

(d) That the discharge will not contain unacceptable levels of pathogenic organisms in areas used for sports involving physical contact with the water;

(e) That the discharge will not occur in areas of concentrated shellfish production; and

(f) That the discharge will not destroy or endanger the critical habitat of a threatened or endangered species as identified under the Endangered Species Act.

(iii) Discharges of dredged or fill material in waters other than navigable waters of the United States that have been completed by the effective date of this regulation and such areas of dredged or fill material of less than 500 cubic yards into waters other than navigable waters of the United States that are part of an activity that was commenced before the publication of this regulation that will be completed within six months of the publication of this regulation, and that involves a single and complete project and not a number of projects associated with complete development plans are hereby authorized for purposes of Section 404 of the Federal Water Pollution Control Act without further processing under this regulation: *provided, however, That* the exemption provided from the requirements of this regulation shall not be construed as a waiver of the requirement to obtain a State water quality certification under section 401 of the Federal Water Pollution Control Act or a certification of compliance with a State's approved coastal zone management program pursuant to section 307(c)(3) of the Coastal Zone Management Act in those cases where the discharge of dredged or fill material has not been completed by the date of this regulation: and *further provided, That* the procedures of this regulation shall apply to any activity involving the discharge of dredged or fill material commenced before the date of this regulation if the District Engineer determines that the interests of water quality as expressed in the guidelines (see 40 CFR Part 230) so require. The term "commenced" as used herein shall be satisfied if there has been, before the date of this regulation, some discharge of dredged or fill material into the navigable water as a part of the above activity or an entering into of a written contractual obligation to have the dredged or fill material discharged at a designated disposal site by a contractor.

(iv) All bulkhead and fill activities involving discharges of dredged material or of fill materials in navigable waters other than navigable waters of the United States that are less than 500 feet in length, are construction for property protection and involve less than an average of one cubic yard per running foot are hereby permitted for purposes of section 404 of the Federal Water Pollution Control Act without further processing under this regulation: *provided, However, That* the procedures of this regulation, including those pertaining to individual and general permits (see paragraph (i)(2) (iii)(a), below), shall apply to any discharge(s) of dredged or fill material if the District Engineer determines that the water quality concerns as expressed in the guidelines (see 40 CFR Part 230) indicate the need for such action; and *further provided, That* the conditions specified in subparagraph (i)(1)(iii)(b) are met.

(2) *Transportation of dredged material for the purpose of dumping it in ocean waters and construction of artificial islands and fixed structures on the outer continental shelf.* Departments of the Army authorizations are required for the transportation of dredged material for the purpose of dumping it in ocean waters and construction of artificial islands and fixed structures on the outer continental shelf pursuant to Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 and Section 4(f) of the Outer Continental Shelf Lands Act, respectively.

(3) *Activities of Federal Agencies.* Except as specifically provided in this subparagraph, activities of the type described in paragraphs (a)(1), (2), and (3) of this section done by or on behalf of any Federal agency other than the Corps of Engineers are subject to the authorization procedures of this regulation. Agreements for construction or other services performed for other agencies by the Corps of Engineers do not constitute authorization under the regulation. Division and District Engineers will therefore advise Federal agencies accordingly and cooperate to the fullest extent in the expediting processing of their applications.

(j) By section 10 of the Act of March 3, 1899 (see paragraph (a)(1), above), Congress has delegated to the Secretary of the Army and the Chief of Engineers the duty of authorizing or prohibiting certain work or structures in navigable waters of the United States. The general legislation by which Federal agencies are empowered to act generally is not considered to be sufficient authorization by Congress to satisfy the purposes of section 10. If an agency asserts that its [illegible] congressional authorization meeting the test of section 10 or would otherwise be exempt from the provisions of section 10, the legislative history and/or provisions of the Act should clearly demonstrate that Congress was approving the exact location and plans from which Congress could have considered the effect on navigable waters of the United States or that Congress intended to exempt that agency from the requirements of section 10. Very often such legislation requires final approval of plans or construction by the Chief of Engineers. In such cases, evaluation and authorization under this regulation are limited by the intent of the statutory language involved.

(k) The other provisions set out in paragraph (f)(3) of this section, relating to State or local authorizations, do not apply to work or structures undertaken by Federal agencies except where compliance with any Federal authorization is required by Federal law or Executive policy. Federal agencies are required to comply with the substantive State, interstate, and local water quality standards and effluent limitations as are applicable by law that are adopted in accordance with or effective under the provisions of the Federal Water Pollution Control Act, as amended, in the design, construction, management, operation, and maintenance of their respective facilities. (See Executive Order No. 11752, dated December 17, 1973.) They are not required, however, to obtain and provide certification of compliance with effluent limitations and water quality standards from State or interstate water pollution control agencies in connection with activities involving discharges into navigable waters.

(l) *General Policies for Evaluating Permit Applications.* (1) The decision

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whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. Evaluation of the probable impact that the proposed structure or work may have on the public interest requires a careful weighing of all those factors that become relevant in each particular case. The benefit that reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if authorized the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. See 33 CFR 209.120, Guidelines for Assessment of Economic, Social, and Environmental Effects of Civil Works Projects. This decision should reflect the national concern for both protection and utilization of important resources. All factors that may be relevant to the proposal must be considered; among those factors are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classifications, navigation, recreation, water supply, water quality, and, in general, the needs and welfare of the people. No permit will be granted unless its issuance is found to be in the public interest.

(b) The following general criteria will be considered in the evaluation of every application:

(1) The relative extent of the public and private need for the proposed structure or work.

(2) The desirability of using appropriate alternative locations and methods to accomplish the objective of the proposed structure or work.

(3) The extent and permanence of the beneficial and/or detrimental effects that the proposed structure or work may have on the public and private uses to which the area is suited.

(4) The probable impact of each proposal in relation to the cumulative effect created by other existing and anticipated structures or work in the general area.

(5) Permits will not be issued where certification or authorization of the proposed work is required by Federal, State, and/or local law and that certification or authorization has been denied until processing of an application for a Department of the Army permit will proceed with definitive action has been taken by the responsible State agency to grant or deny the required certification and/or authorization. Where the required State certification and/or authorization has been denied and procedures for reconsideration exist, reasonable time not to exceed 90 days will be allowed for the applicant to attempt to resolve the problem and/or obtain reconsideration of the denial. If the State denial of authorization cannot be thus resolved, the application will be denied in accordance with paragraph (p) of this section.

(6) Where officially adopted State, regional, or local land use classifications, determinations, or policies are applicable to the area of work being under consideration, they shall be presumed to reflect local factors of the public interest and shall be considered in addition with the other factors of the public interest identified in paragraph (b)(1) above.

(7) A proposed activity in a navigable water may result in conflicting comments from several agencies within the same State. While many States have designated a single State agency or individual to provide a single and coordinated State position regarding pending permit applications, where a State has not so designated a single source, District Engineers will elicit from the Governor an expression of his views and desires concerning the application (see also paragraph (j)(3), below). If, in the alternative, an expression from the Governor as to which State agency represents the official State position in this particular case is not forthcoming, then a State permit, license, or authorization is not required by State or Federal law, but a State regional or local agency having jurisdiction or interest over the particular activity comments on the application, due consideration shall be given to these State views as a reflection of local factors of the public interest.

(8) If a favorable State determination is received, the District Engineer will process the application to a conclusion in accordance with the policies and procedures of this regulation. In the absence of overriding national factors of the public interest that may be revealed during the subsequent processing of the permit application, a permit will generally be issued following receipt of a favorable State determination provided the concerns, policies, goals, and requirements as expressed in paragraphs (b)(1) and (2), above, the guidelines set forth in 33 CFR 209.120, and the following statutes have been followed and considered: the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Historical and Archeological Preservation Act, the National Historic Preservation Act, the Endangered Species Act, the Coastal Zone Management Act, the Marine Protection, Research, and Sanctuaries Act of 1972, and the Federal Water Pollution Control Act (see paragraph (j), above).

(9) If the responsible State agency fails to take definitive action to grant or deny required authorizations or to furnish comments as provided in subparagraph (7), above, within six months of the issuance of the public notice, the District Engineer shall process the application to a conclusion.

(c) The District Engineer may, in those States with ongoing State permit programs for work or structures in navigable waters of the United States or the discharge of dredged or fill material in navigable waters, enter into an agreement with the States to jointly process and evaluate Department of the Army and State permit applications. This may include the issuance of joint public notices, the conduct of joint public hearings, if held, and the joint review and analysis of information and comments developed in response to the public notice, public hearing, the environmental assessment and (if necessary) the environmental statement. If necessary, the Fish and Wildlife Coordination Act, the Historical and Archeological Preservation Act, the National Historic Preservation Act, the Endangered Species Act, the Coastal Zone Management Act, the Marine Protection, Research, and Sanctuaries Act of 1972, and the Federal Water Pollution Control Act. In such cases, applications for Department of the Army permits may be processed concurrently with the processing of the State permit in an independent, coordinated and decision by the District Engineer and appropriate State agency.

(d) The District Engineer shall consider the recommendations of the appropriate Regional Director of the Bureau of Sport Fisheries and Wildlife, the Regional Director of the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration, the Regional Administrator of the Environmental Protection Agency, the local representative of the Soil Conservation Service of the Department of Agriculture, and the head of appropriate State agencies in administering the policies and procedures of the regulation.

(e) Factors or particular factors of consideration. In deciding the general policies cited above to the evaluation of a permit application, Corps of Engineers officials will also consider the following policies when they are applicable to the specific application:

(1) Interference with established properties or water resource projects. Authorization of work or structures by the Department of the Army does not convey a property right, nor authorize any injury to property or invasion of other rights.

(2) Safety. Because a landowner has the general right to protect his property from erosion, applications to erect protective structures will usually receive favorable consideration. However, if the protective structure may cause danger to the property of others, the District Engineer will so advise the applicant and inform him of possible alternative methods of protecting his property. Such advice will be given in terms of general guidance only so as not to compete with private engineering firms nor require using the time of government employees. A significant probability of resulting damage to nearby properties can be a basis for denial of an application.

(3) A landowner's general right of access to navigable waters is subject to the similar rights of access held by the landowners and to the general public's right of navigation on the water surface. Proposals which create undue interference with access to, or use of, navigable waters will generally not receive favorable consideration.

(4) Where it is found that the work for which a permit is desired may interfere with a proposed civil works project

of the Corps of Engineers, the applicant and the party or parties responsible for fulfillment of the requirements of [illegible] should be apprised in writing of the fact and of the possibility that a Civil works project which may be constructed in the vicinity of the proposed work might necessitate its removal or reconstruction. They should also be informed that the United States will in no case be liable for any damage or injury to the structures or work authorized which may be caused by or result from future operations undertaken by the Government for the conservation or improvement of navigation, or for other purposes and no claims or right to compensation will accrue from any such damage.

(b) Proposed activities which are in the area of a Civil works project which exists or is under construction will be evaluated to insure that they are compatible with the purposes of the project.

(3) *Non-Federal dredging for navigation.* (i) The location which, as an authorized Federal navigation project is intended to produce will often require similar work related operations by non-Federal agencies (e.g., dredging of access channels to docks and berthing facilities or deepening such a channel to correspond to the Federal project depth). These non-Federal activities will be considered by Corps of Engineers officials in planning the construction and maintenance of Federal navigation projects and, to the maximum practical extent, will be coordinated with interested Federal, State, regional and local agencies and the general public simultaneously with the associated Federal projects. Non-Federal activities which are not so coordinated will be individually evaluated in accordance with paragraph (f) of this section. In evaluating the public interest in connection with applications for permits for such coordinated operations, equal treatment will therefore be accorded, to the fullest extent possible to both Federal and non-Federal participants. Furthermore, permits for non-Federal dredging usually will contain conditions requiring the permittee to comply with the same practices or requirements imposed in connection with related Federal dredging operations with respect to such matters as turbidity, water quality, containment of material, nature and location of approved [illegible] disposal areas (non-Federal use of Federal contained disposal areas will be in accordance with laws governing such areas and regulations governing their use), plant and method of dredging and other factors relating to protection of environmental and ecological values (See also paragraph (g)(1)(v) of this section.)

(ii) A permit for the dredging of a channel, slip or other such project for navigation will also authorize the periodic maintenance dredging of the project. Authority for maintenance dredging will be subject to reevaluation at regular intervals to be specified in the permit. Revalidation will be in accordance with the procedures prescribed in paragraph (e)(1)(i) of this section. The permittee will, however, still require the permittee to give advance notice to the District Engineer each time maintenance dredging is to be performed.

(4) *Effect on wetlands.* (i) Wetlands are those land and water areas subject to regular inundation by tidal, riverine, or lacustrine flowage. Generally included are inland and coastal shallows, marshes, mudflats, estuaries, swamps and similar areas in coastal and inland navigable waters. Many such areas serve important purposes relating to fish and wildlife, recreation, and other elements of the general public interest. As environmentally vital areas they constitute a productive and valuable public resource. The unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.

(ii) Wetlands considered to perform functions important to the public interest include:

(a) Wetlands which serve important natural biological functions, including food chain production, general habitat, and nesting, spawning, rearing and resting sites for aquatic or land species.

(b) Wetlands set aside for study of the aquatic environment or as sanctuaries or refuges.

(c) Wetlands contiguous to areas listed in paragraph (g)(4)(ii)(a) and (b) of this section, the destruction or alteration of which would affect detrimentally the natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics of the above areas.

(d) Wetlands which are significant in shielding other areas from wave action, erosion, or storm damage. Such wetlands often include barrier beaches, islands, reefs and bars.

(e) Wetlands which serve as valuable storage areas for storm and flood waters.

(f) Wetlands which are prime natural recharge areas. Prime recharge areas are locations where surface and ground water are directly interconnected.

(iii) Although a particular alteration of wetlands may constitute a minor change, the cumulative effect of numerous such piecemeal changes often results in a major impairment of the wetland resources. Thus, the particular wetland site for which an application is made will be evaluated with the recognition that it is part of a complex and interrelated wetland area. In addition, the District Engineer may undertake reviews of particular wetland areas, in response to area applications, and in connection with the appropriate Regional Director of the Bureau of Sport Fisheries and Wildlife, the Regional Director of the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration, the Administrator of the Environmental Protection Agency, the local representative of the Soil Conservation Service of the Department of Agriculture, and the head of the appropriate State agency to assess the cumulative effect of activities in such areas.

(iv) Unless the public interest requires otherwise, no permit shall be granted for work in wetlands identified as important by subparagraph (iii) above unless the District Engineer concludes on the basis of the analysis required in paragraph (f) of this section that the benefits of the proposed alteration outweigh the damage to the wetlands resource and the proposal is otherwise in accordance with these guidelines. In evaluating whether a particular alteration is necessary, the District Engineer shall consider whether the proposed activity is dependent upon the wetland resource and particularly, whether feasible alternative sites are available.

(5) The applicant must provide sufficient data on the basis of which the practicability of feasible alternative sites can be evaluated.

(v) In accordance with the policy expressed in paragraph (f)(1)(i) of this section, and with the Congressional policy expressed in the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500), state regulatory laws or programs for classification and protection of wetlands will be given great weight. (See also paragraph (g)(1)(ii) of this section.)

(vi) Work and structures in accordance with the Fish and Wildlife Coordination Act (see paragraph (f)(1)(i) of this section) Corps of Engineers officials will in all permit cases, in accordance with the Act, consult the U.S. Fish and Wildlife Service, the Regional Director, National Marine Fisheries Service, and the head of the agency responsible for fish and wildlife for the state in which the work is to be performed, with a view to the conservation of wildlife resources by prevention of their loss and damage due to the work or structure proposed to be permit. Application (see paragraph (f)(1)(iii) and (f)(1)(i) of this section). They will give great weight to these views on fish and wildlife considerations in evaluating the application. The recommendations will be given in order to minimize or mitigate any damage to such resources, and in appropriate cases the permit may be conditioned to accomplish this purpose.

(vii) The District Engineer may issue a permit over an unfavorable objection based on fish and wildlife considerations by the regional representative of Federal fish and wildlife agencies unless otherwise directed by the Chief of Engineers. Provided however that the policies and procedures stated in the Memorandum of Understanding between the Secretary of the Army and the Department of the Interior (Appendix B) will be followed with respect to all activities involving dredging, excavation, filling and other related work.

(6) *Water quality.* (i) Applications for permits for activities which may affect the quality of navigable waters will be evaluated with a view toward compliance with applicable effluent limitations and water quality standards during both the construction and operation of the proposed activity. Certification of compliance with applicable effluent limitations and water quality standards required under provisions of Section 401 of the

Federal Water Pollution Control Act will be considered inadequate with respect to water quality considerations unless the Regional Administrator, Environmental Protection Agency (EPA), advises of other and it readily appears to be taken into consideration that if the certification were issued to the effect that no effluent limitation and water quality standards have been established acceptable to the proposed activity, or if certification is not required for the proposed activity, the office of the Regional Administrator, EPA, on water quality aspects will be given great weight in evaluating the public application. Any permit issued may be conditioned to implement water quality protection measures.

(iv) If the Regional Administrator, EPA, objects to the issuance of a permit on the basis of water quality considerations and the objection is not resolved by the applicant or the District Engineer and the District Engineer would otherwise issue the permit, the application will be forwarded through channels to the Chief of Engineers for further coordination with the Administrator, EPA, and decision. (See also paragraphs (b)(1) and (b)(4), above and (c)(1)(v) and (c)(2)(i) of this section.)

(d) *Historic, scenic, and recreational values.* (i) Applications for permits covered by this regulation may involve areas which possess recognized historic, cultural, scenic, conservation, recreational or similar values. Full evaluation of the general public interest requires that due consideration be given to the effect which the proposed structure or activity may have on the enhancement, preservation or development of such values. Recognition of these values is often reflected by State, regional, or local land use classifications (see paragraph (f)(1)(i) of this section), or by similar Federal controls or policies. In both cases, action on permit applications should, insofar as possible, be consistent with, and avoid adverse effects on, the values or purposes for which these classifications, controls or policies were established.

(ii) Specific application of the policy in paragraph (d)(1)(i) of this section applies to:

(a) Rivers named in Section 3 of the Wild and Scenic Rivers Act (82 Stat. 906; 16 U.S.C. 1273 *et seq.*) and those proposed for inclusion as provided by subsections 5 and 6 of the Act, or by later legislation.

(b) Historic, cultural, or archeological sites or districts as provided in the National Historic Preservation Act of 1966 (80 Stat. 915; 16 U.S.C. 470 *et seq.*), the Executive Order 11593, May 13, 1971, and Statutes there cited. Particular attention should be directed toward any district, site, building, structure, or object listed in the National Register of Historic Places. Comments regarding such undertakings shall be sought and considered as provided by paragraph (f)(1)(iii)(b) of this section.

(c) Rivers included in the National Register of Natural Landmarks which are published periodically in the Federal Register.

(d) Any other areas named in Acts of Congress or Presidential Proclamations as National Rivers, Wilderness or Wilderness Study Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, and similar areas or may be established under Federal law for similar and related purposes such as estuarine and marine sanctuaries.

(e) *Structures for small boats.* As a matter of policy in the absence of overriding public interest, favorable consideration will be generally be given to applications from riparian proprietors for permits for piers, boat docks, mooring platforms and similar structures for small boats. Particular attention will be given to the location and general design of such structures to prevent possible obstructions to navigation with respect to both the public's use of the waterway and both the public's use of the waterway and both the neighboring proprietors' access to the waterway. Consideration can result from both the existence of the structure and/or activity in connection with other applications in the immediate vicinity for facilities in the interest of safety and from the inability to withstand wave action or other forces which may be encountered. District Engineers will inform applicants of the hazards involved and encourage safety in location, design and operation. Corps of Engineers officials will also encourage cooperative or group use facilities in lieu of individual proprietary use facilities.

(f) Letters transmitting permits for structures for small boats will where applicable, include the following language: "Notice is hereby given that a subsequent report indicates that the structure permitted may be subject to damage by wave wash from passing vessels. Your attention is called to special condition _____ of the permit. The appropriate designation of the permit condition placing responsibility for the permittee and not on the United States for future damage to the structure and safety of boats moored thereto will be inserted.

(g) Boating structures for small recreational boats or other recreational purposes in lakes owned and operated by the Corps of Engineers (such as Reservoir Projects) are normally subject to permit authorities cited in paragraph (b), above when those waters are regarded as navigable waters of the United States (see 33 CFR 209.260). However, such structures will not be authorized under this regulation but will be regulated under applicable regulations of the Chief of Engineers published in Chapter III, Part 327 of Title 36, Code of Federal Regulations. If the land surrounding these lakes is under complete Federal ownership, District Engineers will delineate those portions of the navigable waters of the United States where the provisions of paragraph (e) of this section are applicable and post notice of this delineation in the vicinity of the lake Resource Manager's Office.

(h) Aids to navigation. (i) The placing of non-Federal fixed and floating aids to navigation in a navigable water of the United States is within the purview of section 13 of the River and Harbor Act of 1899. Furthermore, these aids are of particular interest to the U.S. Coast Guard because of their control of marking lighting and standardization of such navigation aids. Applications for permits for the placing of aids to navigation will therefore be coordinated with the appropriate District Commander, U.S. Coast Guard, and permits for such aids will include a condition to the effect that the permittee will conform to the requirements of the Coast Guard for marking, lighting, etc. Aids must read and approving aids to navigation will not ordinarily significantly affect environmental values and the usual form of authorization is by issued will be a letter of permission.

(ii) Fishing structures and appliances in navigable waters of the United States will be lighted for the safety of navigation as follows: Lights will be displayed between sunset and sunrise. They will be placed at each end of the structure, except where the inner end terminates at the shore where there would be no navigable water where there would be no practicable navigation between it and the high-water line of the adjacent coast. In such case no inner light will be required. The outer light will be white and the inner light will be red. The size, capacity and manner of maintenance of the lights will be specified in the Department of the Army permit authorizing the erection of the structure or appliance. When several structures or appliances are placed so close that with no navigable passage between them, they will be considered for lighting purposes as one structure.

(i) *Outer continental shelf.* Artificial islands and fixed structures located on the outer continental shelf are subject to the standard permit procedures of this regulation. Where the islands or structures are to be constructed on lands which are under mineral lease from the Bureau of Land Management, Department of the Interior, that agency, in cooperation with other Federal agencies, fully evaluates the potential effect of the leasing program on the total environment. Accordingly, the decision whether to issue a permit on lands which are under mineral lease from the Department of the Interior will be limited to an evaluation of the impact of the proposed work on navigation and national security. The public notice will so identify the action. (See paragraph (j)(1)(viii)(b) of this section.)

(j) *Effect on limits of the territorial sea.* Structures or work affecting coastal waters may modify the exact line of mean high water which is the basis for determining the three mile limit of the territorial sea, measured from the outermost permanent harbor works which form an integral part of the harbor system, or from the seaward limit of inland waters. However, there are exceptions where piers are intended or have been built out to reach navigable waters, such as the Mississippi River (see *Alabama and Texas* v. *Cox*, 281 U.S. 154 (1930); 281 U.S. 608 (1930)). All applications for structures or work affecting coastal waters will therefore be reviewed specifically to determine whether the limit of the territorial sea might be altered or it is determined that such a change might occur, coordination shall

the Attorney General and the Solicitor of the Department of the Interior is required before final action is taken. The District Engineer will submit a description of the proposed work and a copy of the plans to the Solicitor, Department of the Interior, Washington, D.C. 20240, and request his comments concerning the effects of the proposed work on the water supply rights of the United States. These comments will be received in the file of the application. After completion of standard processing procedures, the file will be forwarded to the Chief of Engineers. The decision in the matter will be made by the Secretary of the Army after consultation with the Attorney General.

(iii) Canals and other artificial waterways connected to navigable waters. (A) A canal or similar artificial waterway is subject to the regulatory authorities discussed in paragraph (b)(1)(i) of this section if it constitutes a navigable water of the United States, or if it is connected to navigable waters of the United States in a manner which affects their course, condition, or capacity. In all cases the construction of navigable waters of the United States requires a permit. Where the canal itself constitutes a navigable water of the United States, evaluation of the permit application and further exercise of regulatory authority will be in accordance with the standard procedures of this regulation. For all other canals the exercise of regulatory authority is restricted to those activities which affect the course, condition, or capacity of the navigable waters of the United States. Examples of the latter may include the length and depth of the canal, the capacity, direction, quality and turbidity of its waters, possible effect upon fish and wildlife values, and maintenance or extension of the configuration.

(B) The proponent of canal work should submit his application for a permit, including a proposed plan of the entire development and the location and description of anticipated dredge, fill and other control structures which will be placed in the canal, to the District Engineer before commencing any form of work. If the connection to navigable waters of the United States has already been made without a permit the District Engineer will proceed in accordance with paragraph (c)(1)(i) of this section. Where a connection has not yet occurred but canal construction is planned or has already begun, the District Engineer will, in writing, advise the proponent of the need for a permit to connect the canal to navigable waters of the United States. He will also ask the proponent if he intends to make such a connection and will request the immediate submission of the plans and permit application if it is so intended. The District Engineer will also advise the proponent that any work is done at the risk that, if a permit is required, it may not be issued, and that the existence of partially-completed excavation work will not be alleged to weigh favorably in evaluation of the permit application.

(iv) Unauthorized activities. The following procedures will be followed with respect to activities which are performed without proper authorization:

(A) When the District Engineer becomes aware of any unauthorized activity which is still in progress, he shall immediately issue a cease and desist order to all persons responsible for and or involved in the performance of the activity. As appropriate cases the District Engineer may also order interim protective measures to be taken by all parties in order to protect the public interest. If there is noncompliance with this cease and desist order, the District Engineer shall forward a factual report, including a recommendation as to whether or not the Chief of Engineers should request the Attorney General to institute a judicial action for injunctive relief against the responsible persons.

(B) In all cases the District Engineer shall commence an immediate investigation to ascertain the facts surrounding the unauthorized activity. In making this investigation the District Engineer shall notify the Corps of appropriate Federal, State and local agencies and shall request the persons involved in the unauthorized activity to provide appropriate information on the activity which will assist him in evaluating the activity and recommending the measures which are to be taken. The District Engineer shall evaluate the information and views received during this investigation in conjunction with the factors and criteria listed in paragraph (f) of this section and shall formulate recommendations as to the appropriate administrative and/or legal action to be taken, subject to the following:

(1) Except where the activity was performed in navigable waters prior to an administrative assertion or legislative determination that the water is a navigable water of the United States, the District Engineer is not authorized to process an after-the-fact permit application received.

(2) The District Engineer shall in all cases other than those noted in the preceding subdivision (c)(1)(iv)(B)(1) of this section prepare and forward a report to the Chief of Engineers. Article Eight (c)(8) of which shall contain an analysis of the facts and information obtained during the investigation and recommend appropriate civil and criminal actions. In those cases where the analysis of the facts developed during the investigation has been made in conjunction with the factors and criteria in paragraph (f) of this section leads to the preliminary conclusion that removal of the unauthorized activity is in the public interest, the District Engineer shall also recommend restoration of the area to the original condition.

(3) In those cases in which the provisions of paragraph (c)(1)(iv)(B)(2) above apply, the District Engineer may refer the matter directly to the local United States Attorney for appropriate legal action.

(C) If criminal and/or civil action is instituted against the responsible party, the District Engineer shall not delay action on processing the application until final disposition of all judicial proceedings, including the payment of all penalties and fines and/or the completion of all work ordered by the court. Thereafter the District Engineer may accept an application for a permit. Provided that with respect to any judicial order requiring restoration or forfeiture of an area, the District Engineer, if so ordered by the court, shall supervise this restoration effort and may allow the responsible persons to apply for a permit for only that portion of the unauthorized activity for which restoration has not been so ordered.

(D) In those cases where the District Engineer determines that the unauthorized work has been performed by another party or by an administrative unit of the government, but that a regulatory determination that the area is a navigable water of the United States has not been made, the District Engineer shall instruct the responsible persons to submit an application for a permit. Action on the application will be determined on the basis of all the facts and circumstances that immediate legal action is warranted in such cases. The District Engineer will follow the procedures of paragraph (c)(1)(iv)(B)(1) and (B)(2) of this section.

(v) Processing and evaluation of applications for after the fact authorizations for activities undertaken without the required Department of the Army authorizations will in all other respects follow the standard procedures of this regulation. Such authorizations may only be issued in accordance with the policies and procedures of this regulation.

(vi) Where after the fact authorization is processed in accordance with this paragraph is determined to be in the public interest, the standard permit form for the activity will be used, existing navigation conditions, and including whatever special conditions the District Engineer may deem appropriate to mitigate or prevent undesirable effects which have occurred or might occur.

(vii) Where after the fact authorization is not determined to be in the public interest, the notification of the denial of the permit will prescribe any corrective actions to be taken in connection with the work already accomplished and establish a reasonable period of time for the applicant to complete such actions. The District Engineer, after denial of the permit, will again consider whether civil or criminal action is appropriate.

(viii) If the applicant declines to accept the proposed permit conditions or fails to take corrective action prescribed in the notification of denial of the District Engineer determines after due notice that the permit application that is pending is to be withdrawn, the matter will be referred by the Chief of Engineers, ATTN: DAEN-CWO-N, with recommendations for appropriate action.

(ix) Applications will generally not be rejected for lack of information solicited before it becomes due. In those cases where potential applicants had received assurances of withdrawal prior to the date of the regular public notice, however, the procedure in paragraph

(iii) Sites previously designated for use as disposal sites for discharge or dumping of dredged material will be specified to the maximum practicable extent to pertain for the discharge or dumping of dredged material in navigable waters or ocean waters, unless directed to the Administrator, EPA, in accordance with section 404(c) of the Federal Water Pollution Control Act or section 102(c) of the Marine Protection, Research, and Sanctuaries Act of 1972.

(iv) Prior to actual issuance of permits for the discharge or dumping of dredged or fill material in navigable or ocean waters, Corps of Engineers officials will advise appropriate Regional Administrators, EPA, of the intent to so issue permits. If the Regional Administrators advise, within fifteen days of the advice of this intent to issue, that he objects to the issuance of the permits, the case will be forwarded to the Chief of Engineers in accordance with paragraph (c) below for further coordination with the Administrator, EPA, and decision. The report forwarding the case will contain an analysis for a determination by the Secretary of the Army that there is no economically feasible method or site available other than that to which the Regional Administrator objects. (See also paragraphs (b)(7) and (b)(8) of this section.)

(3) Activities in coastal zones and on the coasts (i) An activity for Department of the Army authorization for activities in the coastal zone of those States having a coastal zone management program approved by the Secretary of Commerce will be processed with respect to compliance with that program. No permit will be issued until the applicant has certified that the proposed activity complies with the coastal zone management program, and the appropriate State agency has concurred with the certification or has waived its right to do so (see paragraph (b)(3)(iii) of this section). However, a permit may be issued if the Secretary of Commerce, in accordance with the provisions of section 307(c)(3) of the Coastal Zone Management Act of 1972 or is otherwise necessary in the interest of national security.

(ii) Applications for Department of the Army authorization for activities in a marine sanctuary established by the Secretary of Commerce under authority of section 302 of the Marine Protection, Research, and Sanctuaries Act of 1972 will be evaluated for impact on the sanctuary. No permit will be issued until the applicant provides a certification from the Secretary of Commerce that the proposed activity is consistent with the purposes of Title III of the Marine Protection, Research, and Sanctuaries Act of 1972 and can be carried out within the regulations promulgated by the Secretary of Commerce to control activities within the marine sanctuary. Authorizations so issued will contain such special conditions as may be required by the Secretary of Commerce in connection with his certification.

(b) *Applications for authorizations.* (1) Any person proposing to undertake any activity requiring Department of the Army authorization as specified in paragraph (c) of this section must apply for a permit to the District Engineer in charge of the District where the proposed activity is to be performed. Applications for permits must be prepared in accordance with instructions in the pamphlet entitled "Applications for Department of the Army Permits for Activities in Waterways" published by the Corps of Engineers utilizing the prescribed application form. Such form and pamphlet may be obtained from the (by) Engineer having jurisdiction over the waterway in which the proposed activity will be located. Careful attention to the completion of the application form for purposes of facilitating coordination with Wild and local agencies may be prompted by letters of interest. These letters will be published for users of the DACW-(W)-N and for clearance by the Office of Management and Budget.

(2) Generally, the application must include a complete description of the proposed activity which includes necessary drawings, sketches or plans, the location, purpose and intended use of the proposed activity, schedules of the activity, the names and addresses of adjoining property owners and the location and ownership of adjacent structures, and the approval required by other Federal, interstate, State or local agencies for the work, including all approvals or denials already made.

(3) If the activity involves dredging in navigable waters of the United States, the application must include a description of the type, composition and quantity of the material to be dredged, the method of dredging, and the site and plans for disposal of the dredged materials.

(4) If the activity includes the discharge of dredged or fill material in the navigable waters of the United States, the application must include a description of the type, composition and quantity of the material, the method of discharge and disposal of the material and the location of the disposal site. Compliance with section 404(b) of the Federal Water Pollution Control Act, pertaining to such discharges into navigable waters, is mandatory. Applicants for permits for these activities are required to pay a fee of $100 per application for the discharge of material in the Atlantic, Pacific or Gulf coastal waters, or in ocean waters beyond such coastal waters, regardless of the quantity of material to be discharged. In coastal waters, Great Lakes waters, rivers or tributaries thereto, the fee is $10 per application. Agencies or instrumentalities of Federal, State or local governments shall not be required to pay any fee in connection with applications for permits. The fee structure will be reviewed from time to time.

(5) If the activity includes the construction of a pier or other fill, supported platform, the project description must include specific structures to be erected on the fill or platform.

(6) If the activity includes the construction of a structure the normal use of which may result in a discharge of pollutants other than dredged or fill material into navigable waters or ocean waters, the application must include either the identification of the construction for the discharge permit pursuant to the appropriate water pollution control agency or a copy of that application (identification under Section 401 of the Federal Water Pollution Control Act is required for such discharges into navigable waters).

(7) If the activity will be located within a marine sanctuary established by the Secretary of Commerce, the application must include a copy of the certification from the Secretary of Commerce that the proposed activity is consistent with the purposes of Title III of the Marine Protection, Research and Sanctuaries Act of 1972 and can be carried out within the regulations promulgated by the Secretary of Commerce to control activities within the marine sanctuary.

(8) If the activity requires the preparation of an environmental impact statement (see paragraphs (c)(1)(iii) and (c)(1)(iv) of this section), which necessitates the development of data and information which will result in substantial expense to the United States, the District Engineer may, after obtaining written approval from the Division Engineer, charge the applicant for those extraordinary expenses incurred in the development of the investigation pursuant to 31 U.S.C. 483(a). All money so collected shall be paid into the Treasury of the United States as miscellaneous receipts. In lieu of this assessment, the District Engineer may require reports, data and other information for the environmental impact statement (see paragraph (b)(8) of this section) to be compiled by an independent third party under contract with the applicant and furnished to the District Engineer. Provided, in each case, the District Engineer shall specify the type of information to be developed. And provided further, that the information furnished by this third party contractor may not be used by the District Engineer to assist in the preparation of the environmental impact statement unless he has approved the selection of this third party contractor after consulting with interested Federal, State and local agencies, public interest groups and members of the general public, as he deems appropriate, to assure objectivity in the selection. In either case the District Engineer should advise the applicant that there is no assurance that favorable action will ultimately be taken on his application.

(9) In addition to that information required by paragraphs (b)(1) through (b)(8) of this section, the applicant will be required to furnish such additional information as the District Engineer may deem necessary to assist him in the evaluation of the application. Such additional information may include an environmental assessment, including an evaluation of alter-

nate methods and sites, as may be necessary for the preparation of an environmental impact statement (see paragraph (f) below).

(c) This application must be signed by the person who desires to undertake the proposed activity. However, the application may be signed by a duly authorized agent if accompanied by a statement by that person designating the agent and agreeing to furnish, upon request, supplemental information in support of the application. In either case, the signature of the applicant will be understood to be an affirmation that he possesses the authority to undertake the activity proposed in his application, except where the lands are under the control of the Chief of Engineers, in which case the District Engineer will coordinate the transfer of the real estate and the permit action. When the application is submitted by an agent, the application may include the activity at more than one owner provided the character of the activity at each owner is similar and in the same general area.

(d) *Processing applications for permits—(1) Standard procedures.* (i) When an application for a permit is received, the District Engineer shall immediately assign it a number (or identification), acknowledge receipt thereof, and advise the applicant of the number assigned to it. He shall review the application for completeness and obtain from the applicant any additional information he deems necessary for further processing.

(ii) When all required information has been provided, the District Engineer will issue a public notice as described in paragraph (f) of this section, unless specifically exempted by other provisions of this regulation. The notice will be distributed by posting in post offices or other appropriate public places in the vicinity of the site of the proposed work and will be sent to the applicant, to appropriate city and county officials, to adjoining property owners, to appropriate State agencies, to concerned Federal agencies, to local, national and regional shipping and other concerned business and conservation organizations, and to any other interested parties as in the judgment of the District Engineer the proposed work may affect. A copy of the notice will be furnished to the local news media for publication. The public notice will be drawn in such a manner that pertinent data in the application necessary to understand the nature of the activity and the applicant shall reimburse the District Engineer for the costs of publication. Copies of public notices will be sent to all parties who have previously requested copies of such notices, to the U.S. Senators and Representatives for the area where the work is to be performed, the Field Representative of the Secretary of the Interior, the Regional Director of the Bureau of Sport Fisheries and Wildlife, the Regional Director of the National Park Service, the Regional Administrator of the Environmental Protection Agency (EPA), the Regional Director of the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration (NOAA), the head of the State agency responsible for fish and wildlife resources, the District Commander, U.S. Coast Guard, and the Office of the Chief of Engineers, Attention: DAEN-CWO-N.

(iii) The District Engineer shall consider all comments received in response to the public notice in the subsequent actions on the permit application. Receipt of the comments will be acknowledged and they will be made a part of the official file on the application. Comments received as form letters or petitions may be acknowledged as a group to the person or organization responsible for the form letter or petition. If comments relate to matters within the special expertise of another Federal agency, the District Engineer may seek the advice of that agency. The applicant must be given the opportunity to furnish the District Engineer his proposed resolution of or rebuttal to all objections from Government agencies and other substantive adverse comments before final decision will be made on the application.

(iv) The District Engineer will consider whether or not an environmental impact statement is necessary (see paragraph (f) of this section) at the earliest time during the processing of an application involving an activity which is not already subject to an environmental impact statement. This will be done when he can make an assessment of the environmental impact of a proposed activity, which in some cases may be upon receipt of the application due to the magnitude of the proposed project or the nature of the area involved. This will be reconsidered as additional information is developed, however, at the earliest time that it appears an environmental impact statement may be required the District Engineer will require the applicant to furnish additional information and an analysis of the environmental impacts of the proposed action. A preliminary determination as to whether an environmental impact statement will be prepared or a statement that an environmental impact statement has already been prepared for the overall activity by the Corps of Engineers or another Federal agency will be announced in the public notice (see paragraph (d)(1)(ii) of this section). If the District Engineer determines that an environmental impact statement will not be prepared for the proposed activity, a finding to that effect, and immediately thereafter, the permit will be issued if the public notice has indicated an intent to prepare a statement with no intent to prepare a statement. This finding shall be dated and signed and shall include a brief statement of the facts and reasons for the decision of the District Engineer by which he believes that granting the permit may be recommended (that the proposed activity would significantly affect the quality of the human environment, so that preparation of an environmental impact statement in accordance with § 209.410 is not required. In such cases and if a public hearing is to be held (see paragraph (d)(1)(v), below), the proposed final environmental impact statement should be completed prior to the hearing. If a public meeting is held, however, the draft environmental impact statement will be filed with the Council on Environmental Quality (CEQ) at least 15 days prior to the meeting.

(v) If the proposed activity includes the discharge of dredged or fill material into navigable waters or the transportation of dredged material for the purpose of dumping it in ocean waters and a person or persons having an interest which may be affected by the issuance of a permit requests a hearing, or if a concurrent State objects to issuance of a permit on the basis of water quality and requests a hearing, or if otherwise required by law or directed by the Chief of Engineers, the District Engineer will arrange a public hearing in accordance with applicable Corps of Engineers regulations (§ 209.410). If no public hearing is to be held and the District Engineer determines that public interest warrants and additional information necessary to the proper evaluation of the application would probably be obtained thereby, the District Engineer will hold a public meeting (see paragraph (e) of this section).

(vi) After all above actions have been completed, the District Engineer will determine in accordance with the record and applicable regulations whether or not the permit should be issued. If a permit is warranted, he will determine the conditions and duration which should be incorporated into the permit (see paragraphs (m) and (n) of this section). In accordance with the authorities specified in paragraph (a) of this section, the District Engineer will take final action or forward the application with all pertinent comments, records and studies, including the final environmental impact statement if prepared, and a statement of findings to support his recommendation, through channels to the Chief of Engineers and to make the final decision. The report forwarding the application for decision will be in the format prescribed in paragraph (e) of this section. Notice that the application has been forwarded to higher headquarters will be furnished the applicant. When the final decision is made, the statement of findings to support that decision will be entered in the permit file. If an environmental impact statement was filed with the report, a copy of the statement of findings will be submitted to DAEN-CWO-N for filing with CEQ. In those cases where an environmental impact statement has not been prepared, the application, the report forwarded for decision, the format prescribed in paragraph (e) of this section, the record will serve as the statement of findings.

(vii) If the final decision is to deny the permit, the applicant will be notified in writing of the reason for denial. If the final decision is to issue the permit, the District Engineer will forward two copies of the draft permit to the applicant for signature, accepting the conditions of the permit. The applicant will return both signed copies to the issuing official who will sign and date the permit. The permit is not valid until signed by the District Engineer. Final action on the permit application is the signature of the letter

notifying the applicant of the denial of his application or signature of the issuing official on the authorization document.

(vii) The District Engineer will publish monthly a list of permits issued or denied during the previous month. The list will identify each action by public notice number, name of applicant and brief description of activity involved. This list will be distributed to all persons who received any of the public notices listed.

(ix) If the applicant fails to respond within (1) month(s) to any request or inquiry of the District Engineer, the District Engineer may advise the applicant by registered letter that his application will be considered as having been withdrawn unless the applicant responds thereto within thirty days of the date of the letter.

(d) Procedures for particular types of permit situations. (1) Activities requiring water quality certification.

(a) If water quality certification for the proposed activity is necessary under the provisions of the Federal Water Pollution Control Act (the District Engineer shall so notify the applicant and obtain from him either the appropriate certification or a copy of his application for such certification. The District Engineer shall forward one copy of the permit application to the appropriate certifying agency and two copies to the Regional Administrator of the Environmental Protection Agency (EPA). The District Engineer may use the public notice of the application jointly with the certifying agency if arrangements for such joint notices have been approved by the Division Engineer. When the certification is received a copy of the certification will be forwarded to the Regional Administrator of EPA who shall determine if the proposed activity may affect the quality of the waters of any State or States other than the State in which the work is to be performed. If he needs supplemental information in order to make this determination, the Regional Administrator may request it from the District Engineer who shall obtain it from the applicant and forward it to the Regional Administrator. The Regional Administrator shall within thirty days of receipt of the application, certification and supplemental information notify the affected State, the District Engineer and the applicant in the event such a second State may be affected. The second State then has sixty days to advise the District Engineer that it objects to the issuance of the permit on the basis of the effect on the quality of its waters and to request a hearing.

(b) No authorization will be granted until a required certification has been obtained or has been waived. Waiver is deemed to occur if the certifying agency fails or refuses to act on a request for certification within a reasonable period of time after receipt of such request. The request for certification must be made in accordance with the regulations of the certifying agency. In determining whether or not a waiver period has commenced, the District Engineer will verify that the certifying agency has received a valid request for certification. Three months shall generally be considered to be a reasonable period of time. However, special circumstances identified by the District Engineer require that action on an application be taken within a more limited period of time, the District Engineer shall determine a reasonable lesser period of time within the certifying agency of the need for action by a particular date and that, if certification is not received by that date, it will be considered that the requirement for certification has been waived. Similarly if it appears that circumstances may reasonably require a period of time longer than three months, the District Engineer may afford the certifying agency up to one year to provide the required certification before determining that a waiver has occurred. District Engineers shall check with the certifying agency at the end of the allotted period of time before determining that a waiver has occurred.

(c) If the proposed activity will be in the coastal zone of a State the District Engineer shall obtain from the applicant a certification that the activity conforms to the coastal zone management program of the State (upon receipt of the certification the District Engineer will forward a copy of the permit application and certification to the State office responsible for implementing the coastal zone management program and request its concurrence or objection. The District Engineer can issue the public notice of the application jointly with the State agency if arrangements for such joint notices have been approved by the Division Engineer. A copy of the certification will also be sent, along with the public notice of the application to the Director, Office of Coastal Zone Management, NOAA, Department of Commerce, Washington, D.C. If the State agency fails to concur or object to the certification within six months of receipt of the request, it will be presumed to waive its right to act and the certification will be presumed to be valid. Before determining that a waiver has occurred the District Engineer will check with the State agency to verify that it has failed to act. If the State agency objects to the proposed activity, the District Engineer will so advise the Director, Office of Coastal Zone Management, NOAA, and request advice within thirty days whether or not the Secretary of Commerce will review the objection. If the objection will not be reviewed, the permit will be denied. However, the Secretary of Commerce indicates he will review the objection, further action on the application will be held in abeyance pending notification of the results of the review. If the objection is sustained, the permit will be denied. If the objection is overruled by the Secretary's finding, however, the processing will be continued.

(d) If the proposed activity involves any property listed in the National Register of Historic Places (which is published in its entirety in the Federal Register annually in February with addenda published each month), the District Engineer will determine if any aspect of the activity (alone or may cause any change in the quality of the historical, architectural, archeological, or cultural character that qualified the property for listing in the National Register. Undertakings which include but are not limited to destruction or alteration of all or part of the property; isolation from or alteration of its surrounding environment; and introduction of visual, audible, or atmospheric elements that are out of character with the property and its setting. If the District Engineer determines that the activity will have no effect on the property, he will proceed with the standard procedures for processing the application. If however, the District Engineer determines that the activity will have an effect on the property, he will proceed in accordance with the procedures specified in the Federal Register, Volume 37, Number 220, November 14, 1972, pages 24146 to 24148.

(e) If the proposed activity consists of the dredging of an access channel and/or berthing facility associated with an authorized Federal navigation project, the activity will be included in the planning and coordination of the construction or maintenance of the Federal project to the maximum extent feasible. Separate notice, meeting or hearing and environmental impact statement will not be required for activities so included and coordinated, and the public notice issued by the District Engineer for these Federal and associated non-Federal activities will be the notice of intent to issue permits for those included non-Federal dredging activities required by paragraph (a)(1)(iv) of this section. The decision whether to issue or deny such a permit will be consistent with the decision on the Federal project unless special considerations applicable to the proposed activity are identified.

(f) In addition to the general distribution of public notices cited in paragraph (a)(1)(vi) of this section, notices will be sent to other addressees in appropriate cases as follows:

(1) If the activity involves structures or dredging along the coasts of the sea or Great Lakes, to the Coastal Engineering Research Center, Washington, D.C. 20315.

(2) If the activity involves construction of deep draft structures or activities located on the outer continental shelf or in the territorial seas, to the Deputy Assistant Secretary of Defense (Installations and Logistics), Washington, D.C. 20301, the Director, Defense Mapping Agency, Hydrographic Center, Washington, D.C. 20315, Attention: Code PO1, and the Director, National Ocean Survey, NOAA, Department of Commerce, Rockville, Maryland 20852.

(3) If the activity involves the construction of structures in enhance, the approaches, along the Atlantic and Gulf coasts, to the Atlantic Estuarine Fisheries Center, National Marine Fisheries Service, NOAA, Department of Commerce, Beaufort, North Carolina 28516.

(4) If the activity involves the construction of structures which may affect

aircraft operations or for purposes associated with existing operations by the Regional Director of the Federal Aviation Administration.

(v) If the activity is in connection with a foreign-trade zone, to the Executive Secretary, Foreign-Trade Zones Board, Department of Commerce, Washington, D.C. 20230, and to the appropriate District Director of Customs as Resident Representative, Foreign-Trade Zones Board.

(vi) Copies of permits will be furnished to other agencies in appropriate cases as follows:

(a) If the activity involves the construction of structures or artificial islands on the outer continental shelf, to the Director, Defense Mapping Agency Hydrographic Center, Washington, D.C. 20390, Attention: Code NS14, and to the Director, National Ocean Survey, NOAA, Department of Commerce, Rockville, Maryland 20852.

(b) If the activity involves the construction of structures to enhance fish propagation, fish harvest along the coasts of the United States, to Defense Mapping Agency Hydrographic Center and National Ocean Survey as in paragraph (c)(1)(vi)(a) of this section and to the Atlantic Estuarine Fisheries Center, National Marine Fisheries Service, NOAA, Department of Commerce, Beaufort, North Carolina 28516.

(c) If the activity involves the excavation of an aerial transmission line across a navigable water of the United States, to the Director, National Ocean Survey, NOAA, Department of Commerce, Rockville, Maryland 20852, reference C622.

(d) If the activity is listed in paragraph (c)(1)(vi)(a), (b), or (c) of this section or involves the transportation of dredged material for the purpose of dumping it in ocean waters, to the appropriate District Commander, U.S. Coast Guard.

(vii) If the District Engineer determines that a letter of permission (see paragraph (g) of this section) is the appropriate form of authorization to be issued, he may omit the publishing of a public notice; however, he will coordinate the proposal with all concerned Federal and State agencies, Federal and State as required by the Fish and Wildlife Coordination Act. A copy of the letter of permission will be sent to the Regional Director, Bureau of Sport Fisheries and Wildlife.

(viii) If the circumstances surrounding a permit application require coordination with the District Engineer considers that the public interest requires that the standard procedures not be observed in the particular case, he will explain the circumstances and request special procedures to the Chief of Engineers, Attn: DAEN-CWO-N (or telegraph, Chief of Engineers, Washington, D.C.). The Chief of Engineers, after coordination with the Secretary of the Army or his authorized representative and other affected agencies, will instruct the District Engineer as to further processing of the application.

(ix) *Period of review.* The District Engineer may, after completion of the public notice procedures and receipt and evaluation of all pertinent information, issue general permits for certain clearly described categories of structures or work, including discharges of dredged or fill material, requiring Department of the Army permits. After a general permit has been issued, individual activities that fall within those categories that are authorized by such general permits do not have to be further authorized by the procedures of this regulation unless the District Engineer determines on a case-by-case basis, that the public interest requires.

(a) District Engineers will include only those activities that are substantially similar in nature, that cause only minimal adverse environmental impact when performed separately, and that will have only a minimal adverse cumulative effect on the environment as a whole, which are candidates for general permits.

(b) In addition to the conditions prescribed in Appendix C of this Regulation, any general permit issued by the District Engineer shall prescribe the following conditions:

(1) The maximum quantity of material that is authorized for discharge by the general permit in a single or incidental operation (if applicable).

(2) A description of the category or categories of activities included in the general permit; and

(3) The type of material into which the activity may occur.

(c) The District Engineer shall require reporting procedures where the general permit fails to designate a specific water body or water bodies. He may require such procedures in other situations.

(d) A general permit may be revoked or it is determined that the cumulative effects of the activities or it will have an adverse impact on the public interest. Before the procedures of paragraph (c) of this regulation are followed. Following revocation, any future activities in areas covered by the general permit shall be processed as individual permits under this regulation.

(x) *Timing of processing of applications.* In view of the extensive coordination with other agencies and the public and the study of all aspects of proposed activities required by the above procedures, applicants must allow adequate time for the processing of their applications. The District Engineer will be guided by the following time limits for the indicated steps in processing permit applications:

(1) Public notice should be issued within fifteen days of receipt of all required information from the applicant, unless joint notice with State agencies is to be used.

(2) The receipt of comments as a result of the public notice should not extend beyond seventy-five days from the date of the notice.

(3) The record of a public meeting should be closed not later than fifteen days after the meeting.

(4) The District Engineer should either send notice of denial to the applicant, or issue the draft permit to the applicant for acceptance and signature, or forward the application to higher headquarters within thirty days of one of the following (whichever is later): receipt of notice of withdrawal of objections; completion of coordination following receipt of applicant's rebuttal of objections; receipt of the record of a public hearing; closing of the record of a public meeting; or expiration of the waiting period following the filing of the draft environmental impact statement with CEQ.

(xi) *Public notice and coordination with interested parties.* (a) The Public Notice is the primary method of advising all interested parties of the proposed activity for which a permit is sought and of soliciting comments and information necessary to evaluate the probable impact on the public interest. The notice must, therefore, include sufficient information to give a clear understanding of the nature of the activity to generate meaningful comments. The notice should include the following items of information:

(1) The name and address of the applicant;

(2) The location of the proposed activity;

(3) A brief description of the proposed activity, its purpose and intended use, including a description of the type of structure, if any, to be erected on fills, or pile or float supported platforms, and a description of the type, composition and quantity of materials to be discharged or dumped and means of conveyance;

(4) A plan and elevation drawing showing the general and specific site location and character of all proposed activities, including the size relationship of the proposed structures to the size of the impacted waterway and depth of water in the area;

(5) A list of other government authorizations obtained or requested, including required certifications relative to water quality, coastal zone management, or marine sanctuaries;

(6) A statement concerning a preliminary determination of the need for and/or availability of an environmental impact statement;

(7) Any other available information which may assist interested parties in evaluating the likely impact of the proposed activity, if any, on factors affecting the public interest, including environmental values;

(8) A reasonable period of time, normally thirty days but not less than fifteen days from date of mailing, within which interested parties may express their views concerning the permit application; and

(9) A paragraph describing the various factors on which decisions are based during evaluation of a permit application.

(b) Except as provided in paragraph (c)(1)(xi)(c) of this section the following will be included:

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the

public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, among those are conservation, economics, aesthetics, general environmental concerns, wetlands, fish and wildlife values, flood hazards, floodplain values, land use classification, navigation, recreation, water supply, water quality, and, in general, the needs and welfare of the people. No permit will be granted unless its issuance is found to be in the public interest.

(j) If a Federal agency other than the Corps of Engineers has primary responsibility for licensing an activity and for environmental review as contemplated by the provisions of the National Environmental Policy Act, (see paragraph (g)(3) of this section), the public notice shall, in lieu of the general paragraph above, describe the actions and reviews pending before those agencies, note the fact that District Engineers will consult with, and give due consideration to the findings of those agencies and include the following paragraph: "The decision whether to issue a permit will be based on a consideration of the effect which the proposed activity will have on the navigable capacity of the waterway. (See particularly paragraphs (a)(1), (g)(1), and (g)(2) of this section.)"

(k) If the activity involves the discharge of dredged or fill material into the navigable waters or the transportation of dredged material for the purpose of dumping it in ocean waters, the public notice shall also indicate that the evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, EPA, under authority of section 404(b) of the Federal Water Pollution Control Act or of the criteria established under authority of section 102(a) of the Marine Protection, Research and Sanctuaries Act of 1972 as appropriate.

(l) In cases involving construction of fixed structures or artificial islands on the outer continental shelf lands which are under mineral lease from the Department of the Interior, the notice will contain the following statement: "The decision whether a permit will be issued will be based on an evaluation of the impact of the proposed work on navigation and national security."

(m) If the activity includes the discharge of dredged or fill material in the navigable waters or the transportation of dredged material for the purpose of dumping it in ocean waters, the following statement will also be included in the public notice:

Any person who has an interest which may be affected by the issuance or denial of a permit may request a public hearing. The request must be submitted in writing to the District Engineer within the comment period specified in the notice. Any request for a public hearing shall state, with particularity, the reasons for holding a public hearing. If a hearing is held, it will be conducted in accordance with the procedures specified in this section. Such hearing may be held before a representative designated by the District Engineer.

(n) It is presumed that all interested parties and agencies will wish to respond to public notices. Therefore, a lack of response will be interpreted as meaning that there is no objection to the application. A copy of the public notice with the list of the addressees to whom the notice was sent will be included in the record. If a question develops with respect to an activity for which another agency has responsibility and that other agency has not responded to the public notice, the District Engineer may request their comments. Whenever a response to a public notice has been received from a member of Congress either on behalf of a constituent or himself, the District Engineer will inform the member of Congress of the final decision.

(o) Notices sent to several agencies within the same State may result in conflicting comments from those agencies. Where many States have designated a single State agency or individual to coordinate all resulting pending permit applications, where a State has not so designated a single source, District Engineers will solicit from the Governor an expression of his views and desires regarding the application. Where coordination is required by the Fish and Wildlife Coordination Act, consultation under this section will normally satisfy that requirement. District Engineers will address a letter to the designated single State agency or Governor, as appropriate, inviting attention to the coordination requirements of the Fish and Wildlife Coordination Act and requesting that a report from the head of the State agency responsible for fish and wildlife resources be forwarded to the coordinated State report.

(p) Public meetings. (1) It is the policy of the Corps of Engineers to conduct the civil works program in an atmosphere of public understanding, trust, mutual cooperation, and in a manner responsive to the public interest. The views of all concerned persons are normally sought by means of public notices for permits. Where response to a public notice indicates further opportunity for public expression of interest may be warranted and a public hearing is not required by law, it will be directed by the Chief of Engineers or the District Engineer may hold a public meeting.

(2) A public meeting is a forum at which all concerned persons are given an opportunity to present additional information relevant to a proper evaluation of an application for a permit for an activity. If a public meeting is held, notice announcing the meeting will be published at least thirty days in advance of the meeting. A summary of pertinent points made during the meeting will be included in the notice. The applicant will be given an opportunity to present his proposal and explain why he thinks it is in the public interest. Officials of other Federal agencies or of State and local governments will be given opportunity to express their views as well as all other persons. The conduct of the meeting will be in accordance with these rules and a transcript of the meeting will be part of the record.

(q) Environmental impact statement. (1) Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies, with respect to major Federal actions significantly affecting the quality of the human environment, to submit to CEQ a detailed statement on:

(i) The environmental impact of the proposed action;

(ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented;

(iii) Alternatives to the proposed action;

(iv) The relationship between local short term uses of man's environment and the maintenance and enhancement of long term productivity;

(v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

(2) As indicated in paragraph (g)(1)(ii) of this section the District Engineer must determine whether an environmental impact statement is required in connection with a permit application. If the District Engineer believes that granting the permit may be interpreted as not that the proposed activity would have a significant environmental impact, an environmental impact statement will be prepared coordinated and filed in accordance with provisions of 1 prior to final action on the application. If another agency is the lead agency as defined by section 05 of the CEQ guidelines contained in 1 and if the District Engineer will coordinate with that agency to insure that the resulting environmental impact statement adequately describes the impact of the activity which is subject to Corps permit authority.

(3) The scope of the considerations to be discussed in an environmental impact statement depends heavily on conducting court interpretation of NEPA and on the nature of the activity for which authorization is requested.

(i) All the direct effects of the activity must be considered as must any indirect effects which have a clear or proximate relationship to the activity. Effort of facts however, may be too speculative or remote to merit detailed consideration. Thus an environmental impact statement should carefully examine the probable environmental impact of an activity should evaluate all known effects which have a direct or proximate but indirect relationship to the proposal and should eliminate other remote or speculative effects.

(ii) The scope of the environmental impact statement [illegible] differ somewhat from that of the base upon which the activity may be authorized. Thus, an authorization may be on a part of a much larger and more complex operation or development and which has regulatory control and in such cases the range of factors to be discussed in the environmental impact statement may

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of necessity be expanded to include factors which are beyond the normal scope of the law on which the authorization depends.

(b) *Forms of authorization.* (1) The basic form for authorizing activities in navigable waters or ocean waters is ENG Form 1721, (Department of the Army Permit) (Appendix C). This form will be used to authorize activities under provisions of:

(i) Section 10 of the River and Harbor Act of March 3, 1899 in all cases where a letter of permission is not appropriate (see paragraph (e)(1) of this section).

(ii) Section 404 of the Federal Water Pollution Control Act.

(iii) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972.

(2) While the general conditions included in ENG Form 1721 are normally applicable to all permits, some may not apply to certain authorizations (e.g., after-the-fact situations where work is completed, or situations in which the permittee is a Federal agency) and may be deleted by the issuing officer. Special conditions applicable to the specific activity will be included in the permit as necessary to protect the public interest in the navigable waters or ocean waters.

(3) In those cases subject to section 10 of the River and Harbor Act of March 3, 1899, in which, in the opinion of the District Engineer, the proposed work to be done will not have significant impact on environmental values, and should encounter no opposition, the District Engineer may use the abbreviated processing procedures of paragraph (c)(3)(iv) of this section and authorize the work by a letter of permission. The letter of permission will not be used to authorize the discharge of dredged or fill material into navigable waters or the transportation of dredged material for purpose of dumping it in ocean waters. The letter of permission will be in letter form and will identify the permittee, the authorized work and location of the work, the contractor's authority (i.e., 33 U.S.C. 403), any limitations on the work, a completion time limit and a requirement for a report of completed work. A copy of the general conditions from ENG Form 1721 will be attached and will be incorporated by reference into the letter of permission.

(4) Permits for structures under section 9 of the Act of March 3, 1905, will be drafted during joint procedures at Department of the Army level.

(c) *Duration of authorizations.* (1) Authorizations for activities in or affecting navigable waters or ocean waters may authorize both the work and the resulting structure. Authorizations continue in effect until they automatically expire, or are modified, suspended or revoked.

(2) Authorization for the existence of a structure or other form of alteration of the waterway is usually for an indefinite duration with no expiration date cited. However, where a temporary structure is authorized, or where restoration of a waterway is contemplated, the authorization will be of limited duration with a definite expiration date. Except as provided in paragraph (c)(3) of this section, permits for the discharge of dredged material in the navigable waters or for the transportation of dredged material for the purpose of dumping it in ocean waters will be of limited duration with a definite expiration date.

(3) Authorizations for construction work or other activity will specify time limits for commencing the work or activity. The time limits will specify a date by which the work must be started, normally one year from the date of issuance, and a date by which the work must be completed. The dates will be established by the issuing official and will provide reasonable times based on the scope and nature of the work involved. An authorization for work or other activity will automatically expire if the permittee fails to request an extension or revalidation.

(4) Extensions of time may be granted by the District Engineer for authorizations of limited duration, or for the time limitations imposed for starting or completing the work or activity. The permittee must request the extension and explain the basis of the request which will be granted only if the District Engineer determines that an extension is in the general public interest. Requests for extensions will be processed in accordance with the regular procedures of paragraph (c) of this section including issuance of a public notice except that such processing is not required where the District Engineer determines that there have been no significant changes in the attendant circumstances since the authorization was issued and that the work is proceeding essentially in accordance with the approved plans and conditions.

(5) If the authorized work includes periodic maintenance dredging (see paragraph (a)(3) of this section), an expiration date for the authorization of that maintenance dredging will be included in the permit. The expiration date, which in no event is to exceed ten years from the date of issuance of the permit, will be established by the issuing official after his evaluation of the proposed method of dredging and disposal of the dredged material. If the permittee desires to continue maintenance dredging beyond the expiration date, he must request a revalidation of that portion of the permit which authorized the maintenance dredging. The request must be made to the District Engineer six months prior to the expiration date, and must be supported by the same documentation and full description of the proposed method of dredging and disposal of dredged material. The District Engineer will review the request for revalidation in accordance with the standard procedures in paragraph (c) of this section including the issuance of a public notice, and the authorized work is to be maintained and the proposed methods of maintenance.

(d) *Modification, suspension or revocation of authorizations.* (1) The District Engineer may evaluate the terms, stipulations and conditions of a permit either on his own motion or as the result of periodic progress inspections and initiate action to modify, suspend or revoke a permit as may be made necessary by considerations of the general public interest. Among the factors to be considered are the extent of the permittee's compliance with the terms and conditions of the permit; whether or not circumstances relating to the activity authorized have changed since the permit was issued, extended or revalidated; and the continuing adequacy of the permit conditions; any unanticipated objections to the activity authorized by the permit which were not earlier considered; and the extent to which modification, suspension, or other action would adversely affect plans, investments and actions the permittee has reasonably made or taken in reliance on the permit. Significant increase in scope of a permitted activity will be processed as new applications for permits in accordance with paragraph (c) of this section, and not as modifications under this paragraph.

(2) The District Engineer, as a result of reevaluation of the circumstances and conditions of a permit, may determine that protection of the general public interest requires a modification of the terms or conditions of the permit. In such cases the District Engineer will hold informal consultations with the permittee to ascertain whether the terms and conditions can be modified by mutual agreement. If a mutual agreement is reached on modification of the terms and conditions of the permit, the District Engineer will give the permittee written notice of the modification which will then become effective on such date as the District Engineer may establish, which in no event shall be less than ten days from its date of issuance. In the event a mutual agreement cannot be reached by the District Engineer and the permittee, the District Engineer will proceed in accordance with paragraph (c)(3) of this section if suspension is warranted. In cases where immediate suspension is not warranted but the District Engineer determines that the permit should be modified, he will notify the permittee of the proposed modification and reasons therefor, and that he may request a hearing. The modification will become effective on the date set by the District Engineer which shall be at least ten days after receipt of the notice unless a hearing is requested within that period in accordance with paragraph (c)(3) of this section. If the permittee fails or refuses to comply with the modification, the District Engineer will immediately refer the case for enforcement to the Department of Justice.

(3) The District Engineer may, after reasonable consultation with the Division Engineer, suspend a permit after prior notice to the permittee, without prior opportunity for hearing, if he determines that immediate suspension would be in the general public interest. The District Engineer will notify the permittee in writing of his determination and the reasons therefor, and will afford the permittee the most expeditious means available that the permit has been suspended, with the reasons therefor, and order the permittee to stop all previously authorized activities. The permittee will also be advised that following this suspension a decision will be made to either reinstate, modify, or revoke the permit

and that he may request a hearing within 10 days of receipt of notice of the suspension to present information in the matter. If a hearing is requested the procedures prescribed in § 209.120 will be followed. After the completion of the hearing (or within a reasonable period of time after issuance of the notice to the permittee that the permit has been suspended if no hearing is requested) the District Engineer will take action to reinstate the permit, modify the permit, or recommend revocation of the permit in accordance with paragraph (a)(3)(i) of this section.

(4) Following completion of the procedures prescribed in paragraph (a)(3) of this section, if revocation of the permit is recommended, the District Engineer will prepare a report of the circumstances and forward it together with the record of the suspension proceedings to HQDA (DAEN-CWO-N). The Chief of Engineers may refer to deciding whether or not to revoke the permit, afford the permittee the opportunity to present any additional information not made available to the District Engineer at the time he made the recommendation to revoke the permit including plans appropriate the means by which he intends to comply with the terms and conditions of the permit. The permittee will be advised in writing of the final decision.

(b) *Authority to issue or deny authorizations.* Except as otherwise provided in this regulation, the Secretary of the Army subject to such conditions as he or his authorized representative may from time to time impose, has authorized the Chief of Engineers and his authorized representatives to issue or deny authorizations for construction or other work in or affecting navigable waters of the United States pursuant to sections 10 of the 10 of the Act of March 3, 1899 and section 1 of the Act of June 13, 1902. He also has authorized the Chief of Engineers and his authorized representatives to issue or deny authorizations for the discharge of dredged or fill material in the navigable waters pursuant to section 404 of the Federal Water Pollution Control Act or for the transportation of dredged material for the purpose of dumping it into ocean waters pursuant to section 103 of Marine Protection, Research and Sanctuaries Act of 1972. The authority to issue or deny permits pursuant to section 9 of the River and Harbor Act of March 3, 1899 has not been delegated to the Chief of Engineers or his authorized representatives.

(1) District Engineers are authorized to issue in accordance with this regulation permits and letters of permission which are subject to such special conditions as are necessary to protect the public interest in the navigable waters or ocean waters pursuant to sections 10 and 13 of the River and Harbor Act of March 3, 1899 (section 1 of the River and Harbor Act of June 13, 1902 (section 404 of the Federal Water Pollution Control Act, and section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, in all cases in which there are no timely substantive objections to the proposed work or activity or in which objections have been resolved to the satisfaction of the District Engineer. It is essential to the legality of a permit that it contain the name of the District Engineer as the issuing officer. However, the permit need not be signed by the District Engineer, in person, but may be signed for and in behalf of him by whomever he delegates. District Engineers are authorized to deny permits when required State or local authorization and/or certification has been denied (see paragraph (j)(1)(i) of this section), when a State has objected to a required certification of compliance with the coastal zone management program and the Secretary of Commerce has not reviewed the action and reached a contrary finding (see paragraph (g)(1)(i) and (j)(1)(i) of this section) or when the proposed work will unduly interfere with navigation. All other permit applications (including those cases in paragraph (j)(1)(i) through (vii) of this section will be referred to Division Engineers. District Engineers are also authorized to add, modify, or delete special conditions in permits, except for those conditions which have been imposed by higher authority, and to suspend permits according to the procedures of paragraph (a)(3) of this section.

(2) Division Engineers will review actions to resolve outstanding matters and evaluate all permit applications referred by District Engineers. Division Engineers may authorize the issuance or denial of permits pursuant to sections 10 and 13 of the River and Harbor Act of March 3, 1899, section 1 of the River and Harbor Act of June 13, 1902, section 404 of the Federal Water Pollution Control Act, and section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 and the inclusion of conditions in those permits as may be necessary to protect the public interest in the navigable waters or ocean waters in accordance with the policies cited in this regulation.

(3) Except as provided in paragraph (a)(3)(iii) of this section if the Division Engineer determines that he does not have a permit with or without conditions to be in the public interest but there is a continuing objection to the issuance of the permit by another Federal agency he shall advise the authorized representative of that Federal agency of his intent to issue the permit. The District Engineer shall not proceed with the issuance of a permit within 15 days after the date of this notice of intent to issue a permit or an authorized representative of that Federal Agency indicates to the District Engineer in writing that he wishes to have his concerns in Washington level he may request that the matter be forwarded to higher authority for resolution. Thereafter, a permit will be issued only pursuant to and in accordance with instructions from such higher authority. Every effort should be made to resolve differences at the District Engineer level before referring the matter to higher authority.

(4) Division Engineers will refer to the Chief of Engineers the following cases:

(a) When it is proposed to issue a permit and there are unresolved objections from another Federal agency which must be handled under special procedures specified in statutes or Memoranda of Understanding which thereby preclude final resolution by the Division Engineer (see paragraphs (g)(1)(i), (ii) and (iii) of this section);

(b) When the recommended decision is contrary to the stated position of the Governor of the affected State or of a member of Congress;

(c) When there is substantial doubt as to authority, law, regulations or policy applicable to the proposed activity;

(d) When higher authority requests the case be forwarded for decision;

(e) Where the case is recognized to be highly controversial or litigation is anticipated;

(f) When the proposed activity would affect a baseline used for determination of the limits of the territorial sea.

Division Engineers may also authorize the modification or suspension of permits in accordance with the procedures of this regulation and may recommend revocation of permits to the Chief of Engineers.

(g) *Supervision and enforcement.* (1) District Engineers will supervise all authorized activities and will require that the activity be conducted and executed in conformance with the approved plans and other conditions of the permit. Inspections must be made on timely, periodic during performance of the activity and appropriate notices and instructions will be given permittees to insure that they do not depart from the approved plans. Revocation of permits to secure compliance with its purposes and conditions will be carried out as provided in paragraph (a) of this section. If there are approved material departures from the authorized plans, the District Engineer will require the permittee to furnish corrected plans showing the activity as actually performed.

(2) Where the District Engineer determines that there has been noncompliance with the terms or conditions of a permit he should first contact the responsible party and attempt to resolve the problem. If a mutually acceptable resolution cannot be reached, a written demand for compliance will be made. If the permittee has not agreed to comply within a date of record of the demand, the District Engineer will issue an immediately effective notice of revocation to prevent any work not covered by paragraph (a)(3) of this section, and consider initiation of appropriate legal action.

(3) For purposes of supervision of permitted activities and for surveillance of the navigable waters for enforcement of the permit authorities cited in paragraph (b) of this section, the District Engineer will use all means at his disposal. The method of surveillance for unauthorized activities which should be used where

appropriate is aerial photography reconnaissance. In addition, all Corps of Engineers employees will be instructed to observe and report all activities in navigable waters which would require permits. The assistance of members of the public and personnel of other interested Federal, State and local agencies to observe and report such activity will be encouraged. To facilitate this surveillance, the District Engineer will require a copy of ENG Form 4336 to be posted conspicuously at the site of all authorized activities and will make available to all interested persons information on the scope of authorized activities and the conditions prescribed in the authorizations. Furthermore, significant actions taken under paragraph (a), above, will be brought to the attention of those Federal, State and local agencies and other persons who express particular interest in the affected activity. Surveillance in ocean waters will be accomplished primarily by the Coast Guard pursuant to section 107(c) of the Marine Protection, Research, and Sanctuaries Act of 1972. Enforcement actions relative to the permit authorities cited in paragraph (b) of this section, including enforcement actions resulting from noncompliance with permit conditions, will be in accordance with regulations published at 4 CFR 170 (38 FR 1165, 2-301).

(d) The expenses incurred in connection with the inspection of permitted activity in navigable waters normally will be paid by the Federal Government in accordance with the provisions of Section 6 of the River and Harbor Act of 3 March 1905 (33 U.S.C. 417) unless daily supervision or other unusual expenses are involved. In such unusual cases, and after approval by the Division Engineer, the permittee will be required to bear the expense of inspections in accordance with the conditions of his permit. However, the permittee will not be required or permitted to pay the United States inspector either directly or through the District Engineer. The inspector will be paid on regular payrolls of Corps employees. The District Engineer will collect the cost from the permittee in accordance with the following:

(1) At the end of each month, the accumulated chargeable for the cost of inspection pertaining to the permit will be collected from the permittee and will be taken up on the Statement of Accountability and deposited to a designated depositors to the credit of the Treasurer of the United States, on account of reimbursement of the appropriation from which the expenses of the inspection were paid.

(2) If the District Engineer considers such a procedure necessary to insure the Federal Government against loss through insolvency or failure of the permittee to supply the necessary funds in accordance with paragraph (d)(1)(i) of this section, he may require the permittee to keep on deposit with the District Engineer at all times an amount equal to the estimated cost of inspection and supervision for the ensuing month, such deposit preferably being in the form of a certified check payable to the order of Treasurer of the United States. Certified checks so deposited will be carried in a special deposit account ("guaranty for inspection expenses") and upon completion of the work under the permit the funds will be returned to the permittee provided he has paid the actual cost of inspection.

(3) On completion of work under a permit, and the payment of expenses by the permittee without protest, the account will be closed and outstanding deposits returned to the permittee. If the account is protested by the permittee, it will be referred to the Division Engineer for action before it is closed and before any deposits are returned to the permittee.

(e) If the permitted activity includes restoration of the waterway to its original condition, or if the issuing official has reason to consider that the permittee might be prevented from completing work which is necessary to protect the public interest in the waterway, he may require the permittee to post a bond of sufficient amount to indemnify the government against any loss as a result of corrective action it might take.

(f) Publicity. District Engineer will establish and maintain a program to assure that potential applicants for permits are informed of the requirements of this regulation and of the steps required to obtain permits for activities in navigable waters or ocean waters. Whenever the District Engineer becomes aware of plans being developed by either private or public entities who might require permits in order to implement the plans, he will advise the potential applicant in writing of the statutory requirements and the provisions of this regulation. Similarly, when the District Engineer is aware of changes in Corps of Engineers regulatory jurisdiction he will issue appropriate public notices.

(g) Reports. The report of a District Engineer on an application for a permit requiring action by the Division Engineer or by the Chief of Engineers will be in a letter form with the application and all pertinent components, records and studies including the final environmental impact statement if prepared, as inclosures. The following items will be included or discussed in the report:

(1) Name of applicant.

(2) Location, character and purpose of proposed activity.

(3) Applicable statutory authorities and administrative determinations controlling Corps of Engineers regulatory jurisdiction.

(4) Other Federal, State, and local authorizations obtained or required and pending.

(5) Date of public notice and public meeting or public hearings, if held, and summary of expressions offered with comments of the District Engineer thereon. (The comments should explain the objections and not merely refer to inclosed letters.)

(6) Views of State and local authorities.

(7) Views of District Engineer concerning probable effect of the proposed work on:

(i) Navigation, present and prospective.

(ii) Harbor lines, if established.

(iii) Flood heights, drift and flood damage protection.

(iv) Beach erosion or accretion.

(v) Conservation.

(vi) Fish and wildlife.

(vii) Water quality.

(viii) Aesthetics.

(ix) Ecology (to meet Environmental Concerns).

(x) Historic values.

(xi) Recreation.

(xii) Economy.

(xiii) Water supply.

(xiv) Land use classification and coastal zone management plans.

(xv) Public Interest (Needs and Welfare of the People).

(8) Other pertinent remarks, including:

(i) Extent of public and private need.

(ii) Desirability of using appropriate alternatives.

(iii) Extent and permanence of beneficial and/or detrimental effects; and

(iv) Probable impact in relation to cumulative effects created by other activities.

(9) A copy of the environmental assessment and summary of the environmental impact statement, if prepared.

(10) A Statement of Findings as an inclosure.

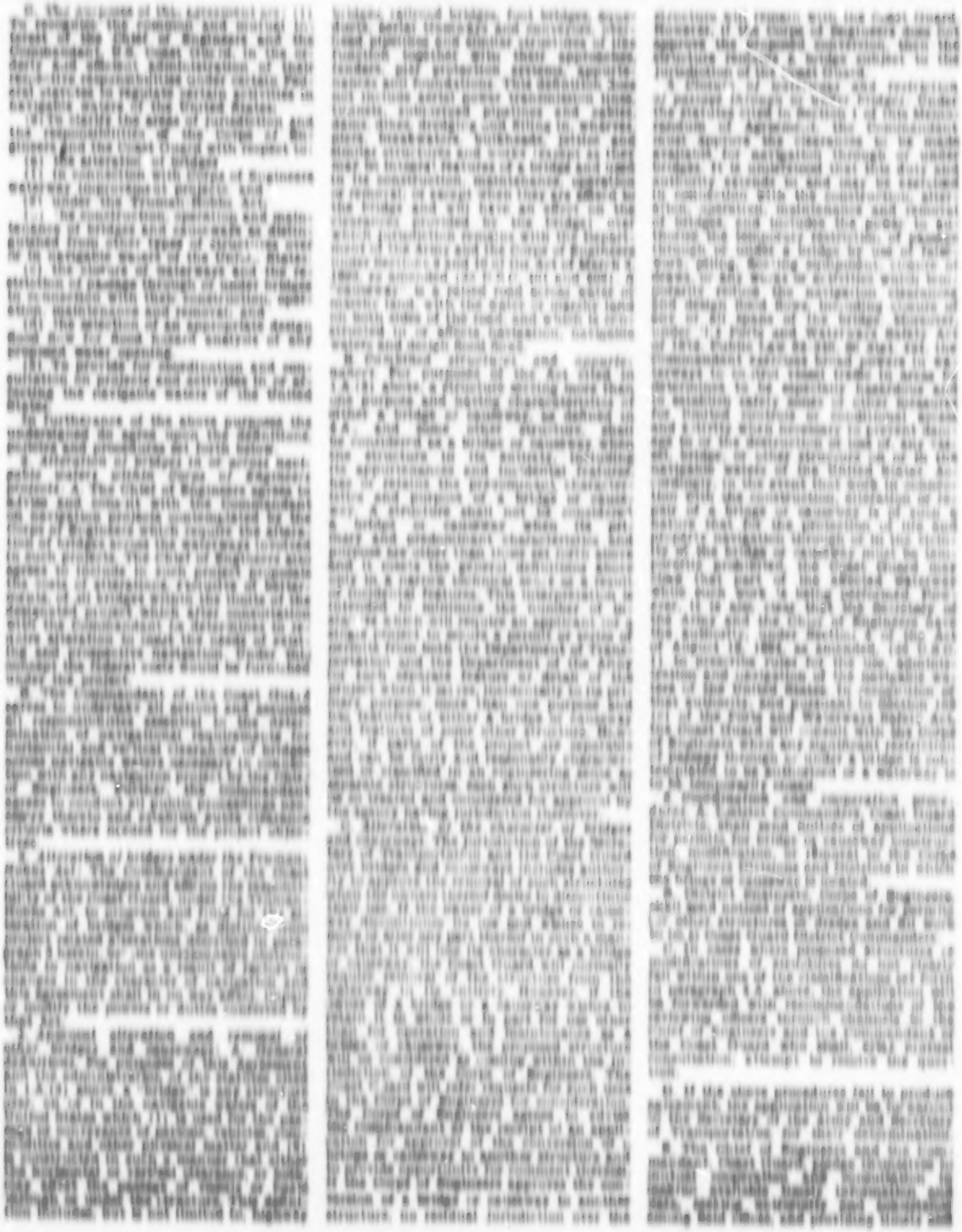
(11) Conclusions.

(12) Recommendations including any proposed special conditions.

Appendix A—U.S. Coast Guard (Office of Operations Administration or Assistant)

1. Purpose and Authority. a. The Department of Transportation Act, the Act of October 15, 1966, 80 Stat. 931, as amended, transferred to and vested in the Secretary of Transportation certain functions, powers and duties previously vested in the Secretary of the Army and the Chief of Engineers. By Delegation of Authority (49 CFR 1.46(c)), the Commandant, U.S. Coast Guard, has been authorized to exercise certain of these functions, powers and duties relating to bridges and causeways contained in:

(1) the Rivers and Harbors Act of 1899, as amended (33 U.S.C. 401, 491, 502, 511-523, 525-533, 535-536, 541-546, 548, 549, 552, 553, 555, 556, 558, 559, 560, 561, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602,



adequate review of all matters arising in connection with the administration of their responsibilities governed by the Acts cited herein.

Dated: March 31, 1970.

C. R. Bonnes,
Dated: April 15, 1970. Director.

F. J. Clarke,
Assistant Director—Conservation.

Appendix B—Memorandum of Understanding Between The Secretary of the Interior and The Secretary of the Army

In recognition of the responsibilities of the Secretary of the Army under sections 9 and 10 of the Act of March 3, 1899 (30 Stat. 1151 and 1152), relating to the control of dredging, filling and excavation in the navigable waters of the United States, and the control of refuse in such waters, and the interrelationship of those responsibilities with the responsibilities of the Secretary of the Interior under the Federal Water Pollution Control Act, as amended (33 U.S.C. 466 et seq.), the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661 et seq.), and the Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a et seq.), relating to the control and prevention of water pollution in such areas and the conservation of the natural resources and related environment, including fish and wildlife and recreational values therein, in recognition of our joint responsibilities under Executive Order No. 11288 to improve water quality through the prevention, control and abatement of water pollution from Federal and federally licensed activities, and in recognition of other provisions of law and policy, we, the two Secretaries, adopt the following policies and procedures:

Policies

1. It is the policy of the two Secretaries that there shall be full consultation and cooperation between their respective Departments on the Army responsibilities at the Departmental levels, and that there shall be maximum efforts by the Secretary of the Army, acting through the Chief of Engineers, and his representatives, including the Division Engineers and the District Engineers, to assist the Secretary of the Interior, and those reporting to him, in the discharge of their responsibilities, including the reduction of adverse effects, if any, on water quality. As the earliest practicable time and at the site of any contemplated work that may be governed by this memorandum, the District Engineer of the U.S. Army Corps of Engineers shall coordinate with the Regional Director of the Secretary of the Interior's Bureau of Sport Fisheries and Wildlife, and with appropriate representatives of the Secretary of the Interior's Federal Water Pollution Control Administration, and with appropriate officials of the State agencies concerned with dredging, filling and excavation operations in the navigable waters of the United States, and they shall give full consideration to the views of the Secretary of the Interior and those officials in the exercise of the responsibilities and authorities which such officials may provide.

2. It is the policy of the Secretary of the Army that the Chief of Engineers, acting for the Secretary of the Army, will not issue permits for the transportation of dredged material for the purpose of dumping it into ocean waters, as defined by the Act of October 23, 1962 (33 U.S.C. 1402), unless the Secretary of the Interior has been given the opportunity to furnish his views to the Secretary of the Army with respect to the effect of the proposed dumping on fish and wildlife resources, including all data presented by the Secretary of the Interior and any other pertinent information obtained by the Secretary of the Army, and unless the Secretary of the Army determines that the proposed dumping will be in the public interest, including compliance with applicable water quality standards established pursuant to law.

Procedures for carrying out these policies

1. Upon receipt of an application for a permit for dredging, filling, excavation, or placement work in navigable waters of the United States, the District Engineers shall send notices to all interested parties, including the appropriate Regional Directors of the Federal Water Pollution Control Administration, the United States Fish and Wildlife Service, and the National Park Service of the Department of the Interior, and the appropriate State conservation, resources, and water pollution agencies.

2. Each Regional Director of the Secretary of the Interior shall immediately make such studies and investigations as they deem necessary, consistent with the provisions of the Federal Water Pollution Control Act, as amended, the Fish and Wildlife Coordination Act, as amended, and other applicable laws, and advise the District Engineer whether the work proposed by the permit applicant, including the depth of dredging or placement of the navigable waters of the United States, will reduce the quality of such waters in violation of applicable water quality standards or unreasonably impair the fish and wildlife resources. Such advice shall be furnished to the United States District Engineer within 30 days of receipt of the notice referred to in paragraph 1 above.

3. The District Engineer will hold public hearings on permit applications whenever in response to public notice interested parties indicate a desire to present their views. Such hearings are desirable to afford all interested parties the full opportunity to be heard on objectionable cases.

4. The District Engineer, in deciding whether a permit should be issued, shall consider all relevant factors, including the effect of the proposed work on the public interest. Before the Secretary of the Interior makes the determination that the proposed work will impair the water quality standards or violate other applicable standards or requirements for the protection of the natural environment, he shall, within the limits of his responsibility, discuss the applicant's proposal with the applicant and attempt to make those changes that will resolve the difficulties. If the applicant does not agree to make the changes, the Secretary of the Interior shall, in writing, inform the District Engineer that the proposed work will impair water quality standards or violate other applicable standards or requirements for the protection of the natural environment. The District Engineer shall, in accordance with the procedures of the Chief of Engineers and the appropriate Regional Director of the Secretary of the Interior, submit the views and recommendations of his agency's Washington Headquarters.

5. The Chief of Engineers shall refer to the Under Secretary of the Interior all cases referred to him containing unresolved conflicting differences of views. He shall include his analysis thereof for the purpose of obtaining the Department of the Interior's comments prior to final determination of the issues.

6. In those cases where the Chief of Engineers and the Under Secretary are unable to resolve the remaining issues, the cases will be referred to the Secretary of the Army and the Secretary of the Interior in consultation with the Secretary of the Interior.

7. In the course of operations under this Understanding, either Secretary may propose to seek modification, or may modify the terms of the Understanding. If any proposed changes in the terms of this Understanding shall affect any applicable work accomplished, as considered desirable or may cause hardship, operation of this Understanding at the end of the period.

Dated: July 13, 1971.

Stanley K. Hathaway,
Secretary of the Interior.

Dated: July 13, 1971.

Stanley Resor,
Secretary of the Army.

Appendix C

Application No. .....
Name of Applicant .....
Waterway No. .....
Expiration Date (if applicable) .....

DEPARTMENT OF THE ARMY

PERMIT

Referring to written request dated ..... a permit is:

( ) Hereby given to do or effecting navigable waters of the United States, upon the recommendation of the Chief of Engineers pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403).

( ) Hereby granted to dredge or fill material in navigable waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816; 33 U.S.C. 1344).

( ) Hereby granted authority for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532).

(Here insert the full name and address of the permittee)

is hereby authorized by the Secretary of the Army to .....

(Here describe the proposed structure or work, and its intended use; in the case of an application for a dry permit, describe the structures, or the purpose of the deposit; in the case of an application for the discharge of dredged or fill material, into navigable waters or the transportation for discharge in ocean waters of dredged material, describe the type and quantity of material to be discharged.)

in .....

(Here insert the name of the waterway)

at .....

(Here insert the nearest well known town(s), preferably a town of the same name as the waterway, and the distance from each town to the work, stating whether above or below or giving direction by points of compass.)

in accordance with the plans and drawings attached hereto, which are hereby incorporated in and made a part of this permit (the drawings may give the number or other definite designation, marked) subject to the following conditions:

1. General conditions: a. That all activities identified and authorized herein shall be consummated within the terms and conditions of this permit, and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth in the aforementioned Acts or other Federal laws. Any modification, suspension or revocation of this permit shall not be the basis for any claim for damages against the United States. Further, the permittee will save the United States harmless from damages arising from the construction, maintenance or existence of the activities authorized herein and any claims arising from the activities authorized by this permit. Unless there is a contrary condition in this permit, all activities authorized herein shall be consummated within three years of the date of this permit.

b. That all activities authorized herein shall, if they involve, during their construction, operation, maintenance or use, any discharge of dredged or fill material, additionally comply with applicable effluent limitations and water quality standards established under section 307 of the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816; P.L. 92-500), section 404 of the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816; P.L. 92-500), section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532), and pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction, operation or maintenance of pollutants into waters of the United States (for purposes of this paragraph, the term "discharge" includes, without limitation, any addition of any pollutant to navigable waters from: any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the contiguous zone or the ocean from surface discharges into those waters or from activities on the land which result in pollutants reaching those waters as well as discharges of wastewater into those waters from vessels or other floating craft which are being used as a means of transportation. This definition does not include discharges of pollutants into waters of the contiguous zone or the ocean from vessels or other floating craft which are being used as a means of transportation.), the applicant shall comply with applicable effluent standards or prohibitions established under section 307 of the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816; P.L. 92-500) and with the requirements set forth in this permit to control the discharge within the proper conditions as to the permit, including compliance with applicable State water quality standards. The discharge must be consistent with the requirements and conditions of this permit and must be consistent with the requirements and conditions of this permit and must be consistent with the requirements and conditions of this permit and

[illegible]

[illegible]

[illegible]

Appendix B—Description of Authority To Grant Rights-of-Way Affecting Navigable Waters of the United States

May 24, 1971

Pursuant to the authority vested in me by [illegible] of March 3, 1899, as amended (33 U.S.C. 401, 403), Section 10 [illegible] of August 8, 1917, as amended (43 U.S.C. 945), and the Act of June 15, 1917 (40 Stat. 241), as amended by the Act of June 10, 1920 (41 Stat. 1063), as further amended by the Act of March 4, 1931 (46 Stat. 1535), as further amended by the Act of August 26, 1937 (50 Stat. 844), I hereby authorize the Chief of Engineers and his authorized representatives to issue or grant permits for construction of dikes and other structures in waters of the United States [illegible] permits for structures and permits to construct wharves or other fixed structures on Outer Continental Shelf lands under federal lease from the Department of the Interior, the Chief of Engineers shall, in exercising such authority, evaluate the impact of the proposed work on the public interest, in order to [illegible] conditions the permits for drilling islands or fixed structures on Outer Continental Shelf lands under mineral lease from the Department of the Interior, the Chief of Engineers shall, in exercising such authority, evaluate the impact of the proposed work on navigation and national security. The permits so granted may be made subject to such special conditions as the Chief of Engineers or his authorized representatives may consider necessary in order to effect the purposes of the above Acts.

The Chief of Engineers and his authorized representatives shall exercise the authority hereby delegated subject to such conditions as I or my authorized representative may from time to time impose.

Rogers B. Morton,
Secretary of the Army.

Appendix B—Description of Authority To Grant Permits for Temporary Occupation or Use of Civil Works Projects

March 10, 1970

Pursuant to the authority vested in me by Section 4(d) of the Federal Water Pollution Control Act Amendments of 1970 (84 Stat. 91), as [illegible] hereby authorize the Chief of Engineers and his duly authorized representatives to issue or deny permits after notice and opportunity for public hearings for the discharge of dredged or fill material into navigable waters at specified disposal sites. The Chief of Engineers shall, in exercising such authority, evaluate the impact of the proposed discharge on the public interest. No permit may be issued for the discharge of dredged or fill material through the application of guidelines developed by the Administrator of the Environmental Protection Agency and published in [illegible] more than guidelines could prohibit the specification of a disposal site by the Chief of Engineers or his authorized representatives, or whether the permit should be conditioned to require the construction of treatment facilities, or management practices, or both, as a condition precedent to the discharge of dredged or fill material. In the event the Administrator of the Environmental Protection Agency determines that the discharge of dredged or fill material at a particular site will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas, he shall prohibit the specification of that site for the disposal of dredged or fill material. In any such event, the Chief of Engineers or his authorized representative shall not issue a permit for the discharge at that site. Before making determinations of unacceptable adverse effect, the Administrator of the Environmental Protection Agency shall consult with the Secretary of the Army acting through the Chief of Engineers or his authorized representative. Such consultations shall be conducted in accordance with guidelines agreed to by the Administrator of the Environmental Protection Agency and the Secretary of the Army acting through the Chief of Engineers or his authorized representative. Nothing in this authorization shall be construed to limit the authority of the Secretary of the Army to prohibit the specification of any site for the disposal of dredged or fill material, to deny a permit for the discharge of dredged or fill material into any such site, or to require the modification of any permit issued by the Chief of Engineers or his authorized representative with respect to any such site, whenever he determines, after consultation with the Administrator of the Environmental Protection Agency, that the discharge of such material into such site will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas. Whenever the Secretary of the Army acting through the Chief of Engineers or his authorized representative makes such a determination, he shall inform the Administrator of the Environmental Protection Agency and afford him the opportunity to consult with the Secretary of the Army acting through the Chief of Engineers or his authorized representative and to submit his views to the Secretary of the Army acting through the Chief of Engineers or his authorized representative within a reasonable time thereafter before the permit is denied or withdrawn. Any denial of permit or withdrawal of specification pursuant to this determination shall be set forth in writing and shall include the basis for the decision

[illegible] AND REGULATIONS

[illegible]

APPENDIX B

Many of the types of hydrologic modifications considered require dredging during their implementation or during their operation. For navigable waterway segments, it will be necessary to comply with requirements outlined in the information included in this Appendix, which covers testing of the material that it is proposed to dredge and deposit in spoil areas. The proposed guidelines, as published, are subject to revision and publication in final form in the Federal Register. When this occurs, the final version will replace the one included in this Appendix. Prior to using the incorporated regulations, the appropriate Regional Office, Environmental Protection Agency, should be contacted to ensure it is still current, or to obtain the latest version, if one is available.

federal register

FRIDAY, SEPTEMBER 5, 1975

PART II:

ENVIRONMENTAL PROTECTION AGENCY

■

NAVIGABLE WATERS

Discharge of Dredged or Fill Material

Title 40—Protection of the Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 441-1]

PART 230—NAVIGABLE WATERS

Discharge of Dredged or Fill Material

The Administrator of the Environmental Protection Agency (EPA) on May 5, 1975, proposed guidelines, pursuant to section 404(b)(1) of the Federal Water Pollution Control Act Amendments of 1972, Pub. L. 92-500 (hereinafter the Act), for the purpose of establishing guidance to be applied in evaluating the discharge of dredged or fill material in navigable waters. The guidelines were developed in connection with the Army pursuant to section 404(b) of the Act.

Written comments were to be submitted to the Environmental Protection Agency by June 6, 1975. This date was extended to June 20 and consideration has been given to all comments received.

The guidelines are applicable to all activities involving the discharge of dredged or fill material in navigable waters, defined in the Act to mean "the waters of the United States, including the territorial seas." Such discharges are prohibited except in compliance with permits issued by the Secretary of the Army, acting through the Chief of Engineers, after notice and opportunity for public hearings (see 33 CFR 209.120, "Permits for Activities in Navigable Waters or Their Tributaries," published by the Corps of Engineers in the Federal Register on July 25, 1975). These guidelines are applicable to all Federal projects or activities (or to the extent they are applicable to any other project or activity involving a discharge of dredged or fill material).

Interim final guidelines are being published in order to provide immediate guidance to the implementation of the permit program under section 404 of the Act. While these guidelines become effective upon publication, there will be an additional comment period of 90 days in order that the public may comment further on any of its provisions. Thereafter, the comments will be reviewed and the guidelines modified if necessary.

The development of a permit program to regulate the discharge of dredged material and fill material in all waters of the United States has been the subject of intensive discussions between the Environmental Protection Agency and the Corps of Engineers, as well as other Federal and State agencies and the public. We have worked together in an effort to develop a program that is manageable responsive to the concerns of protecting vital national water resources from degradation through irresponsible and irreversible practices, and sensitive to the often conflicting needs and desires of people who utilize these resources. We have attempted to create a program that recognizes the need to intervene at all concerns of the public to the decision-making process, that recognizes that present limitations on manpower preclude its immediate implementation throughout the country, and that we believe to be responsive to the overall objectives and needs of the Federal Water Pollution Control Act.

Section 230.1 contemplates the purpose and scope of the guidelines. Section 230.2 and Appendix A contain definitions to be used in the application of the guidelines in the program under section 404 of the Act.

The procedures for evaluating the discharge of dredged or fill material are outlined in § 230.3. This section is intended to emphasize that each provision of §§ 230.4 and 230.5 must be applied in reaching one of the following determinations: (1) Allowing the proposed discharge with appropriate discharge conditions to minimize unacceptable effects on the aquatic environment; (2) denying the proposed discharge when the discharge will have an unacceptable effect on the aquatic environment; or (3) requesting additional information where necessary to enable a sound decision.

Section 230.4 presents general application for technical evaluation of discharges of dredged or fill material. Section 230.4-1 describes the types of possible effects that may result from the discharge of dredged or fill material and technical approaches which are available to evaluate such effects where appropriate. Section 230.4-2 contains the considerations that will be given to water quality standards.

Section 230.5 presents objectives and considerations for evaluating proposed sites and for conditioning discharges so as to minimize harmful effects when the disposal site can be approved. All proposed discharges will be analyzed by application of each provision presented.

Section 230.6 provides guidance on the use of general permits for categories of discharge activities that will have only minimal effect on the aquatic environment. Section 230.7 encourages advanced study of aquatic areas to identify those areas of critical ecological concern and those areas that are less sensitive. It is expected that, where practicable, advanced identification of such areas will facilitate planning and improve evaluation of individual and general permits. State and local implementation of advanced planning through mechanisms such as Coastal Zone Management Programs will significantly contribute to the success of these studies.

The following analysis summarizes key comments received on various sections of the proposed guidelines and presents a rationale for the changes made.

(1) Several commenters suggested that the guidelines lack a strong commitment to the spirit of the law by failing to place strict controls on the discretionary power given to the District Engineers. The nationwide application of a single set of guidelines to a variety of discharge activities in a myriad of different aquatic systems requires that the permitting agency retain the discretion to adapt the application and considerations in the guidelines to local conditions. However, many of the explanations and considerations have been rewritten to clarify that discharges will not be allowed if it is determined that the proposed discharge will result in unacceptable harm to the aquatic system.

(2) Several comments indicated confusion over the organization of the guidelines. The guidelines have been reorganized, renumbered and retitled to provide greater clarity and utility.

(3) Many commenters objected to the exemption of fish material extraction from the section 404 permit system. The Corps of Engineers regulations and the guidelines now recognize that the discharge of material extracted and processed on shipboard is included in the section 404 program, while discharges from land-based processing are included in the National Pollutant Discharge Elimination System under section 402 of the Act.

(4) Most of the comments concerned technical analytical procedures. The adequacy of using the results of a description of constituents actually contained in sediments, whether consistent measured are actually available to aquatic organisms and humans, and the criteria for evaluating technical analyses. In addition to the comments volunteered by the interested public, we sought opinions of experts in each of the above areas of concern. All comments indicated that at this time none of the tests specified in the proposed guidelines can be used on a nationwide basis to examine all contaminants thought to contain toxic substances. However, each of the technical evaluations specified in the proposed guidelines can be used meaningfully under some regional conditions. Since there is no single technical evaluation available for nation-wide use, additional physical analysis, bioassays, and biological evaluations have been added. Technical evaluations should be required only when a case-by-case review indicates that the results will provide information necessary to reach a final decision. When used carefully, the results of an appropriate technical evaluation by a given case will serve as one of many factors involved in the decision-making process. The Environmental Protection Agency, in conjunction with the Corps of Engineers will publish a procedures manual to provide details on technical evaluations. Interim technical guidance is available from the District Engineers.

(5) A number of commenters criticized the apparent lack of State participation in 404 permit program. It has never been the intention of this Agency or the Corps of Engineers to exclude the States from this program.

First, since each discharge of dredged or fill material into a navigable water is, in effect, the discharge of a pollutant into the water, a State water quality certification is required under section 401 of the Act before that discharge can be lawfully undertaken. Provision has therefore been made in the Corps of Engineers regulations (see 33 CFR 209.120(f)(1)(ii)) to indicate this legal requirement. Thus, any State may refuse the denial of a section 404 permit if it chooses in doing a water quality certification. Similar situations also exist in those States with approved

Coastal Zone Management Programs: An individual in States with such programs must also certify that the activity will comply with the approved plan. On the other hand, where the State does not have such a certification program, or declines the processing of its certification, the Corps of Engineers will not begin to process the section 404 permit in absence of a timely response from the State, the section 403 permit will be processed to a conclusion.

Second, we are aware that some States have existing permit programs in operation the same types of activities that will be regulated through section 404 of the Act by the Corps of Engineers. To the extent possible, it is our desire to support the State in its decision. Thus, where a State denies a permit, the Corps would not issue a section 404 permit. On the other hand, if a State issues a permit, the Corps would not deny its permit unless there are overriding environmental factors as reflected in these guidelines. We believe that conflicting decisions will be minimized if State permit programs include the policies, procedures, goals, requirements, and objectives enforced in the Corps permit program (see 40 CFR 230.10(a)-(d)) and the national legislation which bolster and supports it. This would include for example, the concerns and requirements of the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the Coastal Zone Management Act and the FWPCA.

Finally provision has been made in the Corps regulations (see 40 CFR 209.120(d)(3)) to allow the District Engineer to enter into an agreement with those States having ongoing permit programs which would enable joint processing of the Department of the Army and the State permit application to an independent conclusion by each entity. This would include joint public notices, joint public hearings, and the joint development, review, and analysis of information which leads to the final decision on a permit application. We strongly encourage States to work with District Engineers in this effort as this is a valuable mechanism for avoiding unnecessary duplication of effort.

Accordingly, having considered the comments received and other relevant information, the Administrator hereby adopts these guidelines as Interim Final, effective upon publication as guidance for evaluating all proposed discharges of dredged or fill material into the navigable waters, and also allowing 90 additional days for public comment after which time the guidelines may be modified if necessary.

All comments should be submitted to Richard C. Berk, Deputy Assistant Administrator for Water Planning and Standards, Office of Water and Hazardous Materials (WH-551), EPA, 401 M Street S.W., Washington, D.C. 20460. All comments received on or before December 4, 1975 will be considered.

Dated: August 28, 1975.

RUSSELL E. TRAIN,
Administrator.

Interim Final Part 230 is added to read as follows:

PART 230—GUIDELINES FOR SPECIFICATION OF DISPOSAL SITES FOR DREDGED OR FILL MATERIAL

Sec.
230.1 Purpose and scope.
230.2 Definitions.
230.3 Evaluation procedures.
230.4 General applicability tests for sections at evaluation.
230.4-1 Physical and chemical impingement impacts on aquatic ecosystems for evaluation.
230.4-2 Water quality considerations.
230.4-3 Location of disposal sites and controlling of discharges of dredged or fill material.
230.5 Criteria of environmental impacts.
230.6 Advanced identification of dredged material disposal areas.
230.6 Revision.

AUTHORITY: Sec. 404(b) Federal Water Pollution Control Act of 1972, Pub. L. 92-500.

§ 230.1 Purpose and scope.

(a) *Purpose.* The guidelines contained herein have been developed by the Administrator, Environmental Protection Agency in conjunction with the Secretary of the Army pursuant to section 404(b) of the Federal Water Pollution Control Act (33 USC 1344).

(1) These guidelines are required be section 404 of the Act to be applied in the issuance of permits for the discharge of dredged or fill material at specified disposal sites. In the event the District Engineer's application of the guidelines would preclude the discharge of dredged or fill material, the District Engineer in making the decision will also evaluate the economic impact on navigation and anchorage which will occur by failing to utilize the proposed disposal site.

(2) In addition, under section 404(c) of the Act, no discharge of dredged or fill material will occur at a proposed disposal site in a navigable water if the Administrator of EPA determines, after notice and opportunity for a public hearing and consultation with the Secretary of the Army, that such discharge will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas.

(b) *Applicability.* These guidelines are applicable to all activities involving the discharge of dredged or fill material in navigable waters. They will be applied by the Corps of Engineers in the review of proposed discharges of dredged or fill material into navigable waters which lie inside the baseline from which the territorial sea is measured or the discharge of fill material into the territorial sea pursuant to the procedures specified in 33 CFR 209.120 and 33 CFR 209.145.

(1) The discharge of dredge material into the territorial sea is governed by the Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. 92-532, and regulations and criteria issued pursuant thereto. (See 33 CFR 209.120, "Permits for Activities in Navigable Waters or Ocean Waters" and 33 CFR 209.145, "Federal Projects Involving the Disposal of Dredged Material in Navigable and Ocean Waters", and 40 CFR 227, "Ocean Dumping Final Regulations and Criteria.")

(2) These guidelines apply in a like manner to all discharges of dredged or fill material into navigable waters proposed to be undertaken by persons not the owners of, or acting for, the United States or the general public and Federal Agencies (including those Corps of Engineers operations) that will result in such discharges.

§ 230.2 Definitions.

For purposes of this subpart 230, the following terms shall have the meanings indicated:

(a) The term "Act" means the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500, 33 USC 1251 et seq.).

(b) The definitions set forth in 33 CFR 209.120(d) are incorporated herein by reference. These cover navigable waters, dredged material, discharge of dredged material, fill material, and discharge of fill material. A copy of these definitions is appended hereto.

(c) The term "Regional Administrator" means the EPA Regional Administrator for the particular EPA Region in which dredged or fill material is proposed to be discharged.

(d) The term "District Engineer" means the District Engineer for the U.S. Army Corps of Engineers District in which dredged or fill material is proposed to be discharged or such other individual as may be designated by the Secretary of the Army to issue 404 permits under section 404 of the Act.

(e) The term "territorial sea" means the belt of the sea measured from the baseline as determined in accordance with the Convention on the Territorial Sea and the Contiguous Zone and extending seaward a distance of three miles.

(f) The term "disposal site" means the location within fixed geographic boundaries in which a discharge of dredged or fill material is proposed or has been undertaken, and includes the volume of water and the substrate over which such water column lies, where applicable.

(g) The term "constituents" means the chemical substances, the solids, and the organisms associated with dredged or fill material.

§ 230.3 Evaluation procedures.

(a) All proposed discharges of dredged or fill material will be processed and evaluated in accordance with these guidelines and with applicable Corps of Engineers regulations (33 CFR 209.120 and 33 CFR 209.145).

(b) Upon issuance of the public notice required by 33 CFR 209.120(f) and 209.145(a) the District Engineer shall send a copy of the public notice to the Regional Administrator.

(c) The role of the Regional Administrator shall include consultation with the District Engineer on the interpretation of the guidelines, review and comment to the District Engineer on permit applications, and implementation of section 404(c) in appropriate cases.

(d) The District Engineer shall utilize these guidelines by making an eco-

logical evaluation following the guidance in § 230.6. The results of the evaluation shall be appropriate to the scope and degree of the proposed discharge activity. The evaluation considerations specified in § 230.5 shall be addressed by the District Engineer in making one of the following determinations pursuant to section 404(b)(1) of the Act:

(1) Allowing the proposed discharge with appropriate discharge conditions to minimize unacceptable effects on the aquatic environment;

(2) Denying the proposed discharge when the discharge will have an unacceptable effect on the aquatic environment;

(3) Requesting additional information where necessary to ensure a sound decision.

(c) The District Engineer shall make use of the following approaches where practicable. Where these application procedures as may be subsequently determined by the Chief of Engineers for minor activities with minimal environmental effects; use of general permit procedures (see § 230.8); and advance identification of disposal areas (see § 230.7). Evaluation of the proposed discharge will also be made based on information contained in Environmental Impact Assessments, Environmental Impact Statements if required, Coastal Zone Management Programs, and River Basin Plans.

§ 230.4 General approaches for technical evaluation.

The effects of discharges of dredged or fill material on aquatic organisms and human use of navigable waters may range from insignificant disruption to irreversible change at the disposal site. Section 230.6 describes the types of ecological effects that may result from the discharge of dredged or fill material and technical approaches to evaluate such effects. Ecological impacts from dredged or fill material discharges can be divided into two main categories: (a) physical effects; and (b) chemical-biological interactive effects.

§ 230.4-1 Physical and chemical-biological interactive effects and approaches for evaluation.

No single test or approach can be applied in all cases to evaluate the effects of proposed discharges of dredged or fill material. Evaluation of the significance of physical effects often may be made without laboratory tests by examining the character of the dredged or fill material proposed for discharge and the discharge area with particular emphasis on the principles given in § 230.6. The chemical changes in water quality may best be simulated by use of an elutriate test. To the extent permitted by the state of the art, expected effects such as toxicity, stimulation, inhibition or bioaccumulation may best be estimated by appropriate bioassays. Suitability of the proposed disposal sites may be evaluated by the use, where appropriate, of sediment analysis or bioevaluation in order to avoid unreasonable burdens on applicants in regard to the amounts and types of data to be provided consideration shall be given by the District Engineer to the economic cost of performing the evaluation. The primary of the data to be provided and the nature and magnitude of any potential environmental effect of the proposed discharge activity. The Corps will publish a procedures manual that will cover standards and description of tests, definitions, sample collection and preservation procedures, calculations and references. Interim guidance to applicants concerning the applicability of specific approaches or procedures will be furnished by the District Engineer.

(a) Physical effects. Physical effects on the aquatic environment include the potential destruction of wetlands, impairment of the water column, and the covering of benthic communities. Other physical effects include changes in bottom geometry and substrate composition that cause subsequent alterations in water circulation, salinity gradients and the exchange of constituents between sediments and overlying water with subsequent alterations of biological communities. (See § 230.5 of these guidelines.)

(1) From a national perspective, the degradation or destruction of aquatic resources by filling operations in wetlands is considered the most severe environmental impact covered by these guidelines. Evaluation procedures for determining the environmental effects of fill operations in wetlands are relatively straightforward. The guiding principle should be that destruction of highly productive wetlands may represent an irreversible loss of a valuable aquatic resource. (See §§ 230.10(a)(3) and 230.5 of these guidelines.) Wetlands considered to perform important functions include but are not limited to the following:

(i) Wetlands that serve important natural biological functions, including food chain production, general habitat, and nesting, spawning, rearing and resting sites for aquatic or land species;

(ii) Wetlands set aside for study of the aquatic environment or as natural sanctuaries (refuges);

(iii) Wetlands contiguous to areas listed in paragraphs (a)(1)(i) and (ii) of this section, the destruction or alteration of which would affect detrimentally the natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics of the above areas;

(iv) Wetlands that are significant in shielding other areas from wave action, erosion or storm damage. Such wetlands often include barrier beaches, islands, reefs and bars;

(v) Wetlands that serve as valuable storage areas for storm and flood waters; and

(vi) Wetlands that are prime natural recharge areas. Prime recharge areas are locations where surface and ground water are directly interconnected.

(2) Effects on the water column are principally those associated with a reduction in light transmission, aesthetic values, and direct destructive effects on plankton and nekton populations. (The significance of water column physical effects are not readily predicted by current technical approaches.)

(3) The effect on benthos is essentially the covering of benthic communities with a subsequent change in community structure or function. It has been noted that the benthic community often will recolonize, although sometimes at a somewhat different ecological structure. Evaluation of the significance of the effect on the benthic community can be estimated prior to the discharge activity from a knowledge of the hydrodynamics of the disposal site, mode of discharge, volume of materials, particle size distribution and types of dredged or fill material and from a knowledge of the benthic community.

(b) Chemical-biological interactive effects. Biological perturbation caused by chemical-biological interactive effects resulting from discharges of dredged or fill material is very difficult to predict. Research performed to date has not clearly demonstrated the extent of chemical-biological interactive effects resulting from contaminants present in the dredged or fill material. The potential concerns of open water discharges of dredged or fill material that contain chemical contaminants are the potential effects on the water column or on benthic communities.

(1) Evaluation of chemical-biological interactive effects [illegible] of fill material may be excluded from the evaluation procedures specified in paragraphs (b)(2) and (3) of this section if one of the conditions specified in paragraphs (b)(1)(i), (ii), or (iii) of this section are determined to exist, unless the District Engineer, after evaluating and considering any comments received from the Regional Administrator, determines that these approaches and procedures are necessary. The Regional Administrator may require, on a case-by-case basis, testing approaches and procedures by stating what additional information is needed through further analyses and how the results of the analysis will be of value in evaluating potential environmental effects. Dredged or fill material may be excluded from evaluation if, in this evaluation, it:

(i) Dredged or fill material is composed predominantly of sand, gravel, or any other naturally occurring sediment material with particle sizes larger than silt, characteristic of and generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels;

(ii) Dredged or fill material is for beach nourishment or restoration and is composed predominantly of sand, gravel or shell with particle sizes compatible with material on receiving shores; or

(iii) When:

(a) The material proposed for discharge is substantially the same as the substrate at the proposed disposal site; and

(b) The site from which the material proposed for discharge is to be taken is

sufficiently removed from sources of pollution to provide reasonable assurance that such material has not been contaminated by such pollutants; and

(iv) Adequate terms and conditions are imposed on the discharge of dredged or fill material to provide reasonable assurance that the material proposed for discharge will not be moved by currents or otherwise in a manner that is damaging to the environment outside the disposal site.

(b) *Water column effects.* Sediments normally contain constituents that exist in different chemical forms and are found in various concentrations in several relative states in the sediment. The potentially bioavailable fraction of a sediment is dissolved in the sediment interstitial water or in a loosely bound form that is present in the sediment. In order to predict the effect on water quality due to release of contaminants from the sediment to the water column, an elutriate test may be used. The elutriate is the supernatant resulting from the vigorous 30 minute shaking of one part bottom sediment from the dredging site with four parts water (vol./vol.) collected from the dredging site followed by one-hour settling time and appropriate centrifugation and 0.8 μm filtration. Major constituents to be analyzed in the elutriate are those deemed critical by the District Engineer, after evaluating and considering any comments received from the Regional Administrator, and considering known sources of discharges in the area and known characteristics of the extraction and disposal sites. Elutriate concentrations should be used in conjunction with the same constituents in disposal site water and other data which describe the volume and rate of the intended discharge, the type of discharge, the hydrodynamic regime at the disposal site, and other available information that aids in the evaluation of impact on water quality (see § 230.5 of these guidelines). The District Engineer may specify bioassays when he determines that such procedures will be of value in reaching this determination. Dilution and dispersion effects subsequent to the discharge at the disposal site will be considered.

(c) *Effects on benthos.* Evaluation of the significance of chemical-biological interactive effects on benthic organisms resulting from the discharge of dredged or fill material is extremely complex and demands procedures which are at the forefront of the current state of the art. Although research has shown that benthic species can ingest contaminated sediment particles, it has not been determined to what degree the contaminants are dissociated from the sediment and incorporated into benthic body tissues thereby gaining entry to the food web. The District Engineer may use an appropriate benthic bioassay when such procedure will be of value in assessing ecological effect and in establishing discharge conditions.

(d) *Procedure for comparison of sites.* (1) When an inventory of the total concentration of chemical constituents deemed critical by the District Engineer would be of value in comparing sediment at the dredging site with sediment at the disposal site, it may require a total sediment chemical analysis. Total sediment analysis is accomplished by concentrated strong acid digestion of solvent extraction for inorganic and organic constituents, respectively. Markedly different concentrations of critical constituents between the excavation and disposal sites may aid in making an environmental assessment of the proposed disposal operation.

(2) When an analysis of biological community structure will be of value to assess the potential for adverse environmental impact at the proposed disposal site, a comparison of the biological characteristics between the excavation and disposal sites may be required by the District Engineer. Biological indicator species may be useful in evaluating the existing degree of stress at both sites. Sensitive species representing community components colonizing various substrate types within the sites should be identified as possible bioassay organisms if tests for toxicity are required. Community structure studies are expensive and time consuming, and therefore should be performed only when they will be of value in determining discharge conditions. This is particularly applicable to large quantities of dredged material known to contain adverse quantities of toxic materials. Community studies should include benthic organisms such as macrobiota and harvestable shellfish, and finfish. Abundance, diversity, and distribution should be documented and correlated with substrate type and other appropriate physical and chemical environmental characteristics.

§ 230.6–3 *Water quality considerations.*

After application of the approaches presented in § 230.6, the District Engineer will compare the concentrations of appropriate constituents to applicable narrative and numerical guidance contained in each water quality standards as are applicable by law. In the event that such discharge would cause a violation of such appropriate and legally applicable standards at the perimeter of the disposal site after consideration of the mixing zone (see § 230.5(c)(1)) discharge shall be prohibited.

§ 230.7 *Selection of disposal sites and conditioning of discharges of dredged or fill material.*

(a) *General considerations and objectives.* In evaluating whether to permit a proposed discharge of dredged or fill material into navigable waters, consideration shall be given to the need for the proposed activity (see 33 CFR 209.120 and 33 CFR 209.145), the availability of alternate sites and methods of disposal that are less damaging to the environment, and such water quality standards as are appropriate and applicable by law. The following objectives shall be considered in making a determination on any proposed discharge:

(1) Avoid discharge activities that significantly disrupt the chemical, physical and biological integrity of the aquatic ecosystem, of which aquatic biota, the substrate and the normal fluctuations of water level are integral components.

(2) Avoid discharge activities that significantly disrupt the food chain, including alterations or decrease in diversity of plant and animal species.

(3) Avoid discharge activities that interfere with the movement of fauna, especially their movement into and out of feeding, spawning, breeding and nursery areas.

(4) Avoid discharge activities that will destroy wetland areas having significant functions in maintenance of water quality.

(5) Recognize that discharge activities might destroy or isolate areas that serve the function of retaining natural high waters or flood waters.

(6) Minimize, where practicable, adverse turbidity levels resulting from the discharge of material.

(7) Minimize discharge activities that will degrade aesthetic, recreational, and economic values.

(8) Avoid degradation of water quality as determined through application of § 230.5 (a), and (d).

(b) *Considerations relating to degradation of water use of proposed disposal sites.* (1) *Municipal water supply intakes.* No disposal site may be designated in the proximity of a public water supply intake. The District Engineer and the Regional Administrator will determine the acceptable location of the disposal site in such cases.

(2) *Shellfish.* (i) Disposal sites for dredged or fill material shall not be designated in areas of concentrated shellfish production. In the case of widely dispersed shellfish populations where it is demonstrated by the applicant that the avoidance of shellfish population areas is impossible the disposal site may be designated within such areas, but should be situated so as to cause the least impact on the shellfish population with particular reference to the burial of living forms and maintenance of a suitable substrate.

(ii) Disposal sites should be located to minimize or prevent the possible movement of pollutants by currents or wave action into productive shellfish beds.

(iii) Banks formed by dredged or fill material should be located and oriented to prevent undesirable changes in current patterns, salinity patterns and flushing rates which may affect shellfish.

(iv) The disposal operation should be scheduled to avoid interference with reproductive processes and avoid undue stress to juvenile forms of shellfish.

(3) *Fisheries.* (i) Significant disruptions of fish spawning and nursery areas should be avoided.

(ii) Dredging and disposal operations should be scheduled to avoid interference with fish spawning cycles and to minimize interference with migration patterns and routes.

(iii) Consideration shall be given to preservation of submerged and emergent vegetation.

(4) *Wildlife.* Disposal sites will be designated so as to take into the impact

on habitat, the most vital components of wildlife, and marine or aquatic sanctuaries.

(b) *Recreation activities.* In evaluating proposed discharges of dredged or fill material in or near recreational areas, the following factors should be considered:

(i) Reasonable methods should be employed to minimize any increase in amount and duration of turbidity which would reduce the numbers and diversity of fish or cause a significant aesthetically displeasing change in the color, taste, or odor of the water.

(ii) Release of nutrients from dredged or fill material should be minimized in or to prevent eutrophication, the degradation of aesthetic values, and impairment of recreation uses.

(iii) No material that will result in unacceptable levels of pathogenic organisms shall be discharged in areas used for recreation involving physical contact with the water.

(iv) No material shall be discharged which will release oil and grease in harmful quantities as defined in 40 CFR 110.

(5) *Threatened and endangered species.* No discharge will be allowed that will jeopardize the continued existence of threatened or endangered species or destroy or modify the habitat of those species determined critical in accordance with the Endangered Species Act.

(6) *Benthic life.* Disposal sites should be areas where benthic life which might be damaged by the discharge is minimal, recognizing that enhancement may also occur. Use of existing disposal sites is generally desirable.

(7) *Wetlands.* (i) Discharge of dredged material in wetlands may be permitted only when it can be demonstrated that the site selected is the least environmentally damaging alternative; provided, however, that the wetlands disposal site may be permitted if the applicant is able to demonstrate that other alternatives are not practicable and that the wetlands disposal will not have an unacceptable adverse impact on the aquatic resources. Where the discharge is part of an approved Federal program which will protect or enhance the value of the wetlands to the ecosystem, the site may be permitted.

(ii) Discharge of fill material in wetlands shall not be permitted unless the applicant clearly demonstrates the following:

(a) the activity associated with the fill must have direct access or proximity to, or be located in, the water resource (in order to fulfill) its basic purpose, or that other site or construction alternatives are not practicable; and

(b) that the proposed fill and the activity associated with it will not cause a permanent unacceptable disruption to the beneficial water quality uses of the affected aquatic ecosystem, or that the discharge is part of an approved Federal program which will protect or enhance the value of the wetlands to the ecosystem.

(8) *Submerged Vegetation.* Disposal sites shall be located to minimize the impact on submerged vegetation (for example, the Posidonia and Zostera beds) and other areas supporting submerged vegetation of significant biological productivity.

(9) *Size of disposal site.* The specified disposal site shall be confined to the smallest practicable area consistent with the type of dispersion determined to be appropriate by the application of these guidelines. Although the impact of the particular discharge may constitute a minor change, the cumulative effect of numerous such piecemeal changes often results in a major impairment of the water resource and interference with the productivity and water quality processes of existing environmental systems. Thus the particular disposal site will be evaluated with the recognition that it is part of a complete and interrelated ecosystem. The District Engineer may undertake reviews of particular areas in response to new applications, and in consultation with the appropriate Regional Director of the Fish and Wildlife Service, the Regional Director of the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration, the Regional Administrator of the Environmental Protection Agency, the State Conservationist of the Soil Conservation Service of the Department of Agriculture, and the head of the appropriate State agencies, including the State Director of an approved Coastal Zone Management Program, to assess the cumulative effect of activities in such areas.

(c) The following may also be considered in determining the site and disposal conditions to minimize the possibility of harmful effects:

(1) Appropriate scientific literature, such as the National Water Quality Criteria developed by the Administrator pursuant to section 304(a)(1) of the Act;

(2) Alternatives to open water disposal such as upland or confined disposal;

(3) Disposal sites where physical, environmental characteristics are most amenable to the type of dispersion desired;

(4) Disposal seaward of the baseline of the territorial sea;

(5) Covering contaminated dredged material with cleaner material;

(6) Conditions to minimize the effect of runoff from confined areas on the aquatic environment; and

(7) The Regional Administrator may specify appropriate monitoring conditions in proximity of disposal sites where necessary to control and minimize water quality degradation, pursuant to Section 308 of the Act.

(d) *Contaminated fill material restrictions.* The discharge of fill material originating from a land source shall not be allowed when the District Engineer determines that the material contains unacceptable quantities, concentrations or forms of the constituents deemed critical by the District Engineer or the Regional Administrator for the proposed disposal site, unless such material is effectively contained to prevent the discharge, leaching, or solution of the material outside the confined area. Appropriate corrections in § 230.1 may be used in making this determination.

(e) *Mixing zone determination.* The mixing zone shall be the smallest practicable mixing zone or both each specified disposal site consistent with the objectives of these guidelines, in which desired concentrations of constituents must be achieved.

(The District Engineer and the Regional Administrator shall consider the following factors in determining the acceptability of a proposed mixing zone:

(1) Surface area, depth and volume of the discharge site;

(2) Current velocity, direction and constancy at the discharge site;

(3) Degree of turbulence;

(4) Stratification attributable to causes which include without limitation salinity, obstructions, and specific gravity; and

(5) Any on-site studies or mathematical models which have been developed with respect to mixing patterns at the discharge site; and

(6) Such other factors prevailing at the discharge site that affect rates and patterns of mixing.

§ 230.6 General or categorical permits.

(a) The District Engineer upon compliance with the procedures of 33 CFR 209.120 may issue a general permit for a clearly described category of discharge activities if he determines that the category meets the following conditions:

(1) The activities included in the category are substantially similar in nature; and

(2) The activities included in the category have substantially similar impact on water and the aquatic system and the adverse impact on water quality and the aquatic system is minimal for each discharge activity; and

(3) The cumulative impact of the total number of activities predicted to occur during the period authorized by the permit is expected to have only minimal adverse effect on water quality and the aquatic system.

(b) The District Engineer may condition general permits to require dischargers to submit the following information at least 45 days prior to commencement of the discharge of dredged or fill material:

(1) The name and address of the discharger;

(2) The location of the contemplated activity including the name and general description of the receiving waters, including wetlands, and the size of the area to be filled;

(3) A brief description of the proposed activity, its purpose and intended use, including a description of the type of structures, if any, to be erected on fills;

(4) A description of the type, composition, and quantity of materials to be discharged and means of conveyance;

(5) A copy of other Federal, State and local government authorizations obtained including a State water quality

certification under Section 401 of the Federal Water Pollution Control Act and, where applicable, a certification of consistency with an approved State Coastal Zone Management Program pursuant to Section 307(c)(3) of the Coastal Zone Management Act.

(c) If paragraph b. required the District Engineer shall record the proposed disposal site as authorized and the authorization will occur automatically 30 days after receipt of notification unless the applicant is otherwise notified by the District Engineer.

(d) A general permit may be revoked completely or partially by the District Engineer independently or on the advice of the Regional Administrator if he determines that the discharges of dredged or fill material authorized by it or the cumulative effects thereof will have an adverse impact on water quality and the aquatic system. Following revocation, discharges of dredged or fill material in areas formerly covered by the general permit shall be processed as individual permits under this regulation.

§ 230.7 Advanced identification of dredged material disposal sites.

(a) The District Engineer and the Regional Administrator, after consultation with the affected State or States, may at their discretion and consistent with the guidelines, identify areas which will be considered as:

(1) Possible future disposal sites; or,

(2) Areas which will not be available for disposal site specification.

(b) The identification of any area as a possible future disposal site shall not be deemed to constitute a permit for the discharge of dredged or fill material within such areas, but may be used in evaluating individual or general permit applications.

(c) A record of areas so identified shall be maintained at the offices of the District Engineer and the Regional Administrator.

(d) To provide the basis for advanced identification of disposal areas and of areas not available for disposal, the Regional Administrator and the District Engineer should assess waterbodies to determine those areas which are of critical ecological concern, those which are of environmental concern, and those sensitive areas. To facilitate this analysis, they should assemble water resource management data including such data as may be available from the other Federal and State agencies listed in § 230.6(a)(15), and information from approved Coastal Zone Management Programs and River Basin Plans.

§ 230.8 Revision.

The provisions of these guidelines will be periodically reviewed by the Administrator in conjunction with the Secretary of the Army pursuant to section 404(b)(1) of the Act. The guidelines may not be modified without approval of the Secretary of the Army and the Administrator. Any proposed revisions, or notice that a review has been completed and no revisions are proposed, will be published in the Federal Register within three years of the date of this initial promulgation or earlier as determined by research results and approved by the Administrator in conjunction with the Secretary of the Army.

Appendix A

[illegible] for the Guide to Navigable Waters of United States

(1) "Navigable waters of the United States." The term, "navigable waters of the United States," is administratively defined to mean waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate commerce landward to their ordinary high water mark and up to the head of navigation as determined by the Chief of Engineers, and also waters that are subject to the ebb and flow of the tide shoreward to their mean high water mark, or to higher high water mark on the Pacific Coast. See 33 CFR 329.4 and 33 CFR 209.260 for a more definitive explanation of this term.

(2) "Navigable waters." (i) The term, "navigable waters," as used herein for purposes of Section 404 of the Federal Water Pollution Control Act, is regulatorily defined to mean waters of the United States including the territorial seas with respect to the disposal of fill material and excluding the territorial seas with respect to the disposal of dredged material and shall include the following waters:

(a) Coastal waters that are navigable waters of the United States subject to the ebb and flow of the tide, shoreward to their mean high water mark (mean higher high water mark on the Pacific coast);

(b) All coastal wetlands, mudflats, swamps, and similar areas that are contiguous or adjacent to other navigable waters. (Coastal wetlands" includes marshes and shallows and means those areas periodically inundated by saline or brackish waters and that are normally characterized by the prevalence of salt or brackish water vegetation capable of growth and reproduction);

(c) Rivers, lakes, streams, and wetlands that are navigable waters of the United States up to their headwaters and landward to their ordinary high water mark;

(d) All artificially created channels and canals used for recreational or other navigational purposes that are connected to other navigable waters landward to their ordinary high water mark;

(e) All tributaries of navigable waters of the United States up to their headwaters and landward to their ordinary high water mark;

(f) Interstate waters landward to their ordinary high water mark and up to their headwaters;

(g) Interstate lakes, rivers and streams landward to their ordinary high water mark and up to their headwaters that are utilized:

(1) By interstate travelers for water-related recreational purposes;

(2) For the removal of fish that are sold in interstate commerce;

(3) For industrial purposes by industries in interstate commerce; or

(4) In the production of agricultural commodities sold or transported in interstate commerce.

(h) Freshwater wetlands including marshes, shallows, swamps and similar areas that are contiguous or adjacent to other navigable waters and that support freshwater vegetation. "Freshwater wetlands" means those areas that are periodically inundated and that are normally characterized by the prevalence of vegetation that requires saturated soil conditions for growth and reproduction; and

(i) Those other waters which the District Engineer determines necessitate regulation for the protection of water quality as expressed in the guidelines (40 CFR 230). For example, in the case of intermittent rivers, streams, tributaries, and perched wetlands that are not contiguous or adjacent to navigable waters identified in paragraphs (a) - (h), a decision on jurisdiction shall be made by the District Engineer.

(ii) The following additional terms are defined as follows:

(a) "Ordinary high water mark" with respect to inland fresh water means the line on the shore established by average of all daily high waters. It is established at that point on the shore that is inundated 33⅓% of the time and is derived by a flow-duration curve for the particular water body that is based on available water stage data. It may also be estimated by erosion or easily recognized characteristics such as shelving, change in the character of the soil, destruction of terrestrial vegetation or its inability to grow, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area.

(b) "Mean high water mark" with respect to ocean and coastal waters means the line on the shore established by the average of all high tides (all higher high tides on the Pacific Coast). It is established by survey based on available data (preferably averaged over a period of 18.6 years because of the variations in tide). In the absence of such data, less precise methods to determine the mean high water mark may be used, such as physical markings or comparison of the area in question with all area having similar physical characteristics for which tidal data are already available.

(c) "Lakes" means natural bodies of water greater than five acres in surface area and all bodies of standing water created by the impounding of navigable waters identified in paragraphs (a) - (h), above. Stock watering ponds and drilling ponds that are not created by such impoundments are not included.

(d) "Headwaters" means the point on the stream above which the flow is not usually more than 5 cubic feet per second, provided however, the volume of flow, point and nonpoint source pollutant characteristics of the watershed, and other factors that may impact on the water quality of waters of the United States will be considered in determining this upstream limit; and

(6) "Primary tributaries" means the main stems of tributaries directly contributing to navigable waters of the United States up to their headwaters and does not include any additional tributaries extending off of the main stems of these tributaries.

(7) "Ocean waters." The term "ocean waters," as defined in the Marine Protection, Research, and Sanctuaries Act of 1972 (Pub. L. 92-532; 86 Stat. 1052), means those waters of the open sea lying seaward of the base line from which the territorial sea is measured as provided for in the Convention on the Territorial Sea and the Contiguous Zone (15 UST 1606; TIAS 5639).

(8) "Dredged material." The term "dredged material" means material that is excavated or dredged from navigable waters. The term does not include material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding and harvesting for production of food, fiber, and forest products.

(9) "Discharge of dredged material." The term "discharge of dredged material" means any addition of dredged material in excess of one cubic yard when used in a single or incidental operation into navigable waters. The term includes, without limitation, the addition of dredged material to a specified discharge site located in navigable waters and the runoff or overflow from a contained land or water disposal area. Discharges of pollutants into navigable waters resulting from the subsequent processing of dredged material that is extracted for any commercial use (other than fill) are not included within this term and are subject to section 402 of the Federal Water Pollution Control Act even though the extraction of such material may require a permit from the Corps of Engineers under section 10 of the River and Harbor Act of 1899.

(10) "Fill material." The term "fill material" means any pollutant used to create fill in the traditional sense of replacing an aquatic area with dry land or of changing the bottom elevation of a water body for any purpose. "Fill material" does not include the following:

(i) Material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding and harvesting, for the production of food, fiber and forest products;

(ii) Material placed for the purpose of maintenance, including emergency reconstruction of recently damaged parts of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures.

(iii) Additions to these categories of activities that are not fill will be considered on both site and these regulations amended accordingly.

(11) "Discharge of fill material." The term "discharge of fill material" means the addition of fill material into navigable waters for the purpose of creating wetlands, alterations of land beneath navigable waters for the impoundment of water. The term generally includes, without limitation, the following activities in a navigable water: placement of fill that is necessary to the construction of any structure; the building of any structure or impoundment requiring rock, sand, dirt, or other pollutants for its construction; site development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as rip-rap, groins, seawalls, breakwalls and bulkheads and fills; beach nourishment; levees; sanitary landfills; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants, and subaqueous utility lines; and artificial reefs.

(FR Doc. 75-23551 Filed 9-4-75; 8:45 am)

APPENDIX C

federal register

WEDNESDAY, MAY 2, 1973
WASHINGTON, D.C.

Volume 38 ■ Number 84

Pages 10789—10908

PART I

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(Continued inside)

shall set forth specific directions to the respondent, in part or in full, and the grounds or reasons therefor. If no exceptions are filed within said 15-day period, ordering Paragraph 1 shall become final without further order of the Board. If exceptions are filed within said 15-day period, further proceedings in connection therewith shall be conducted in such manner as the Board may deem appropriate.

3. An investigation is instituted to determine whether the level of regulated fares, the relationship of first class fares to second class fares, and the level and structure of discount fares in the 48 contiguous State domestic market and rules, regulations, or practices affecting such fares and provisions are unjust, unreasonable, unjustly discriminatory, unduly preferential, unduly prejudicial or otherwise unlawful, and if found to be unlawful, to determine and prescribe the lawful fares and provisions, and rules, regulations, and practices affecting such fares and provisions.

4. Except to the extent granted herein, the petition of Pan American World Airways filed in docket 23264 is dismissed; and

5. Copies of this order be served upon American Airlines, Inc., Braniff Airways, Inc., Continental Air Lines, Inc., Northwest Airlines, Inc., Pan American World Airways, Inc., Trans World Airlines, Inc., United Air Lines, Inc., and Western Air Lines, Inc., who are hereby made parties to this investigation and docket 23264, and upon all parties to docket 23264.

This order will be published in the Federal Register.

By the Civil Aeronautics Board.

[SEAL] EDWIN Z. HOLLAND,
Secretary.

[FR Doc 73-8568 Filed 5-1-73;8:45 am]

COMMISSION ON THE BANKRUPTCY LAWS OF THE UNITED STATES

NOTICE OF MEETINGS

The Commission on the Bankruptcy Laws of the United States will meet between the hours of 10 a.m. and 5 p.m. on May 17, 1973, in the law library of the Rayburn House Office Building and between those same hours on May 18 and 19, in room 2138 of the Rayburn Building. Unresolved questions concerning the proposed chapters on reorganizations, the bankruptcy court, the duration of proceedings, the allowance and priority of claims, and the collection and liquidation of estates will be considered.

FRANK R. KENNEDY,
Executive Director.

[FR Doc 73-8569 Filed 5-1-73;8:45 am]

COMMITTEE FOR PURCHASE OF PRODUCTS AND SERVICES OF THE BLIND AND OTHER SEVERELY HANDICAPPED

PROCUREMENT LIST OF 1973

Notice of Proposed Deletions

Notice is hereby given pursuant to section 2(a) of Public Law 92-28, 85 Stat. 78, of the proposed deletion of the following commodities from Procurement List 1973, March 13, 1973 (38 FR 6743).

Commodities

Class 1330

Brush, Paint:
7920-241-2368
7920-241-2369
7920-241-2370
7920-241-2371
Brush, Scrubbing:
7920-141-1355

Comments and views regarding these proposed deletions may be filed with the Committee on or before May 31, 1973. Communications should be addressed to the Executive Director, Committee for Purchase of Products and Services of the Blind and Other Severely Handicapped, 2009 14th Street North, Suite 610, Arlington, Va. 22201.

By the Committee.

CHARLES W. FLETCHER,
Executive Director.

[FR Doc 73-8566 Filed 5-1-73;8:45 am]

ENVIRONMENTAL PROTECTION AGENCY

PROTECTION OF NATION'S WETLANDS

Policy Statement

Purpose.—The purpose of this statement is to establish EPA policy to preserve the wetland ecosystems and to protect them from destruction through waste water or nonpoint source discharges and their treatment or control in the development and construction of waste water treatment facilities or by other physical, chemical, or biological means.

The wetland resource.—a. Wetlands represent an ecosystem of unique and major importance to the citizens of the Nation and, as a result, they require extraordinary protection. Comparable destructive forces would be expected to inflict more lasting damage to them than to other ecosystems. Through this policy statement, EPA establishes appropriate safeguards for the preservation and protection of the wetland resources.

b. The Nation's wetlands, including marshes, swamps, bogs, and other low-lying areas, which during some period of the year will be covered in part by natural nonflood waters are a unique, valuable, irreplaceable water resource. They serve as a habitat for important fish, bearing mammals, many species of birds, and vegetation. Such areas moderate runoff in watersheds and in the natural multiplication of water and maintain and recharge the ground water supply. They are the nursery areas for a great number of wildlife and aquatic species and serve at times as the source of valuable barbastable timber. They are unique recreational areas such as sites for the value that contacts, activities and privileges are expressions of forms and flora and nonprofit fishing, as well as wild fowl and other hunting.

c. Fresh water wetlands support the adjacent or downstream aquatic ecosystem in addition to the complex web of life that has developed within the wetland environment. The relationship of the fresh water wetland to the subsurface environment is symbiotic, intricate, and fragile. In the tidal wetland areas the tides tend to redistribute the nutrients and sediments throughout the tidal pool, and these in turn form a substrate for the life supported by the tidal marsh. These marshes produce large quantities of plant life that are the source of much of the organic matter consumed by shellfish and other aquatic life in associated estuaries.

d. Protection of wetland areas requires the proper placement and management of any construction activities and controls of nonpoint sources to prevent disturbing significantly the terrain and impairing the quality of the wetland area. Alterations in quantity or quality of the natural flow of water, which nourishes the ecosystem, should be minimized. The addition of harmful waste waters or pollutants contained in such waters should be kept below a level that will alter the natural, physical, chemical, or biological integrity of the wetland area and that will insure no significant increase in nuisance organisms through bioaccumulation.

Policy.—a. In its decision processes it shall be the Agency's policy to give particular consistency and consideration to any proposal that has the potential to damage wetlands, to recognize the irreplaceable value and man's dependence on them, to maintain an environment acceptable to society, and to preserve and protect them from damaging activities.

b. It shall be the Agency's policy to minimize alterations in the quantity or quality of the natural flow of water that nourishes wetlands and to protect wetlands from adverse dredging or filling practices, solid waste management practices, siltation or the addition of pesticides, salts, or toxic materials arising from nonpoint source waters or through construction activities, and to prevent

[illegible] statution of applicable water quality standards from such environmental [illegible]

3. In accordance with the National Environmental Policy Act of 1969, it shall be the policy of this Agency not to grant Federal funds for the construction of municipal waste water treatment facilities or other waste treatment associated improvements which may interfere with or destroy wetland ecosystems, beyond where no other alternative of lesser environmental damage is found to be feasible. In the application for such Federal funds, where there is reason to believe that wetlands will be damaged an assessment will be requested from the applicant that delineates the various alternatives that have been investigated for the construction or treatment of the waste water, including the reasons for rejecting those alternatives not used. A cost benefit appraisal should be included where appropriate.

4. To promote the most environmentally protective measures, it shall be the EPA policy to advise those applicants who [illegible] all waste treatment facilities under a Federal grant program or as a result of a Federal permit that the selection of the most environmentally protective alternative should be made. The Department of the Interior and the Department of Commerce will be consulted to aid in the determination of the probable impact of the pollution abatement program on the pertinent fish and wildlife resources of wetlands. In the event of projected significant adverse environmental impact, a public hearing on the wetlands issue may be held to aid in the selection of the most appropriate action, and EPA may recommend against the issuance of a section 19 Corps of Engineers permit.

Implementation.—EPA will apply this policy to the extent of its authorities in conducting all program activities, including regulatory activities, research, development and demonstration, technical assistance, control of pollution from Federal institutions, and the administration of the construction and demonstration grants, State program grants, and planning grants programs.

William D. Ruckelshaus,
Administrator.

March 20, 1974.

[FR Doc.74-11 6010 Filed 5-1-74;8:45 am]